

OM protein - protein search, using sw model

Run on: March 1, 2005, 08:40:57 ; Search time 11.4389 Seconds  
(without alignments)  
1690.542 Million cell updates/sec

Title: US-10-624-932-2\_COPY\_246\_295  
Perfect score: 290  
Sequence: 1 STWTEWSVCSASCGRGWQKR.....NGGAFCEGQNVQKTACATLC 50

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 2105692 seqs, 386760381 residues

Total number of hits satisfying chosen parameters: 2105692

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : A\_Geneseq\_16Dec04:\*  
1: geneseqp1980s:\*  
2: geneseqp1990s:\*  
3: geneseqp2000s:\*  
4: geneseqp2001s:\*  
5: geneseqp2002s:\*  
6: geneseqp2003as:\*  
7: geneseqp2003bs:\*  
8: geneseqp2004s:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

# SUMMARIES

Result		Query					Description
No.	Score	Match	Length	DB	ID		
1	290	100.0	330	8	ADH71620	Adh71620 Human pro	
2	290	100.0	336	8	ADH71614	Adh71614 Human pro	
3	290	100.0	898	2	AAW78898	Aaw78898 Rat UNC-5	
4	290	100.0	898	5	AAU10543	Aau10543 Rat netri	
5	290	100.0	898	5	AAU85403	Aau85403 Human pro	
6	290	100.0	898	5	AAU97899	Aau97899 Human net	
7	290	100.0	898	5	AAU97900	Aau97900 Rat netri	
8	290	100.0	898	7	ADG42580	Adg42580 Rat trans	
9	290	100.0	898	8	ADH71618	Adh71618 Human pro	

10	290	100.0	943	4	AAM79128	Aam79128	Human	pro
11	249	85.9	636	8	ADR99262	Adr99262	Splice	va
12	249	85.9	669	8	ADR99252	Adr99252	Human	sRO
13	249	85.9	929	7	ADG42583	Adg42583	Human	tra
14	249	85.9	931	4	AAB50691	Aab50691	Human	UNC
15	249	85.9	931	7	ADE63098	Ade63098	Human	Pro
16	249	85.9	931	7	ADG42582	Adg42582	Mouse	tra
17	249	85.9	931	7	ADG42584	Adg42584	Human	tra
18	249	85.9	931	7	ABU64297	Abu64297	Human	thr
19	249	85.9	931	8	ADR99258	Adr99258	Human	unc
20	249	85.9	964	8	ADR99250	Adr99250	Human	lRO
21	249	85.9	982	4	ABG11551	Abg11551	Novel	hum
22	243	83.8	331	8	ADH71612	Adh71612	Human	pro
23	243	83.8	898	8	ADH71626	Adh71626	Human	pro
24	243	83.8	899	5	AAU79939	Aau79939	Human	UNC
25	243	83.8	899	7	ADG42569	Adg42569	Novel	hum
26	243	83.8	899	8	ADH71636	Adh71636	Human	pro
27	243	83.8	899	8	ADH71642	Adh71642	Human	pro
28	243	83.8	899	8	ADH71648	Adh71648	Human	pro
29	243	83.8	899	8	ADH71632	Adh71632	Human	pro
30	243	83.8	899	8	ADH71610	Adh71610	Human	pro
31	243	83.8	899	8	ADH71628	Adh71628	Human	pro
32	243	83.8	899	8	ADH71640	Adh71640	Human	pro
33	243	83.8	899	8	ADH71630	Adh71630	Human	pro
34	243	83.8	899	8	ADH71650	Adh71650	Human	pro
35	243	83.8	899	8	ADH71644	Adh71644	Human	pro
36	243	83.8	899	8	ADH71634	Adh71634	Human	pro
37	243	83.8	899	8	ADH71646	Adh71646	Human	pro
38	243	83.8	899	8	ADH71638	Adh71638	Human	pro
39	239	82.4	56	7	ADC77400	Adc77400	Human	tra
40	239	82.4	321	8	ADQ65811	Adq65811	Novel	hum
41	239	82.4	679	6	ABU52369	Abu52369	Human	GPC
42	239	82.4	679	8	ADL24073	Adl24073	Human	NOV
43	239	82.4	887	7	ADC77422	Adc77422	Human	tra
44	239	82.4	924	6	ABU11210	Abu11210	Human	G-p
45	239	82.4	933	5	AAO18734	Aao18734	Human	NOV

# ALIGNMENTS

## RESULT 1

ADH71620

ID ADH71620 standard; protein; 330 AA.

XX

AC ADH71620;

XX

DT 25-MAR-2004 (first entry)

XX

DE Human protein of the invention NOV21f SEQ ID NO:516.

XX

KW human; cytostatic; immunomodulator; neuroprotective; nootropic;

KW anorectic; antidiabetic; antimicrobial; antilipaemic; gene therapy;

KW vaccine; cancer; cachexia; Alzheimer's disease; Parkinson's disease;

KW obesity; diabetes; infectious disease; metabolic syndrome X;

KW dyslipidaemia.

XX

OS Homo sapiens.  
XX  
PN WO2003102155-A2.  
XX  
PD 11-DEC-2003.  
XX  
PF 03-JUN-2003; 2003WO-US017430.  
XX  
PR 03-JUN-2002; 2002US-0385120P.  
PR 04-JUN-2002; 2002US-0385784P.  
PR 05-JUN-2002; 2002US-0386041P.  
PR 05-JUN-2002; 2002US-0386047P.  
PR 06-JUN-2002; 2002US-0386376P.  
PR 06-JUN-2002; 2002US-0386453P.  
PR 06-JUN-2002; 2002US-0386864P.  
PR 06-JUN-2002; 2002US-0387016P.  
PR 07-JUN-2002; 2002US-0386796P.  
PR 07-JUN-2002; 2002US-0386816P.  
PR 07-JUN-2002; 2002US-0386931P.  
PR 07-JUN-2002; 2002US-0386942P.  
PR 07-JUN-2002; 2002US-0386971P.  
PR 07-JUN-2002; 2002US-0387262P.  
PR 08-JUN-2002; 2002US-0296960P.  
PR 10-JUN-2002; 2002US-0387400P.  
PR 10-JUN-2002; 2002US-0387535P.  
PR 11-JUN-2002; 2002US-0387610P.  
PR 11-JUN-2002; 2002US-0387625P.  
PR 11-JUN-2002; 2002US-0387634P.  
PR 11-JUN-2002; 2002US-0387668P.  
PR 11-JUN-2002; 2002US-0387696P.  
PR 11-JUN-2002; 2002US-0387702P.  
PR 11-JUN-2002; 2002US-0387836P.  
PR 11-JUN-2002; 2002US-0387859P.  
PR 12-JUN-2002; 2002US-0387933P.  
PR 12-JUN-2002; 2002US-0387934P.  
PR 12-JUN-2002; 2002US-0387960P.  
PR 12-JUN-2002; 2002US-0388022P.  
PR 12-JUN-2002; 2002US-0388096P.  
PR 13-JUN-2002; 2002US-0389123P.  
PR 14-JUN-2002; 2002US-0389118P.  
PR 14-JUN-2002; 2002US-0389120P.  
PR 14-JUN-2002; 2002US-0389144P.  
PR 14-JUN-2002; 2002US-0389146P.  
PR 17-JUN-2002; 2002US-0389729P.  
PR 17-JUN-2002; 2002US-0389742P.  
PR 18-JUN-2002; 2002US-0389884P.  
PR 19-JUN-2002; 2002US-0390006P.  
PR 19-JUN-2002; 2002US-0390209P.  
PR 21-JUN-2002; 2002US-0390763P.  
PR 17-JUL-2002; 2002US-0396706P.  
PR 06-AUG-2002; 2002US-0401628P.  
PR 09-AUG-2002; 2002US-0402156P.  
PR 09-AUG-2002; 2002US-0402256P.  
PR 09-AUG-2002; 2002US-0402389P.  
PR 12-AUG-2002; 2002US-0402786P.  
PR 12-AUG-2002; 2002US-0402816P.  
PR 12-AUG-2002; 2002US-0402821P.

PR 12-AUG-2002; 2002US-0402832P.  
PR 13-AUG-2002; 2002US-0403448P.  
PR 13-AUG-2002; 2002US-0403459P.  
PR 13-AUG-2002; 2002US-0403531P.  
PR 13-AUG-2002; 2002US-0403532P.  
PR 13-AUG-2002; 2002US-0403563P.  
PR 13-AUG-2002; 2002US-0406317P.  
PR 15-AUG-2002; 2002US-0403617P.  
PR 26-AUG-2002; 2002US-0406182P.  
PR 26-AUG-2002; 2002US-0406355P.  
PR 27-AUG-2002; 2002US-0406240P.  
PR 12-SEP-2002; 2002US-0410084P.  
PR 20-SEP-2002; 2002US-0412528P.  
PR 23-SEP-2002; 2002US-0412731P.  
PR 30-SEP-2002; 2002US-0414801P.  
PR 30-SEP-2002; 2002US-0414839P.  
PR 30-SEP-2002; 2002US-0414840P.  
PR 30-SEP-2002; 2002US-0414954P.  
PR 09-OCT-2002; 2002US-0417186P.  
PR 09-OCT-2002; 2002US-0417406P.  
PR 23-OCT-2002; 2002US-0420639P.  
PR 28-OCT-2002; 2002US-0421156P.  
PR 31-OCT-2002; 2002US-0422690P.  
PR 01-NOV-2002; 2002US-0423130P.  
PR 05-NOV-2002; 2002US-00423798.  
PR 05-NOV-2002; 2002US-0423798P.  
PR 12-NOV-2002; 2002US-0425453P.

XX

PA (CURA-) CURAGEN CORP.

XX

PI Alsobrook JP, Alvarez E, Anderson DW, Boldog FL, Casman SJ;  
PI Catterton E, Chapoval A, Crabtree-Bokor JR, Edinger SR, Ellerman K;  
PI Ettenberg S, Gangolli EA, Gerlach VL, Gorman L, Gunther E, Guo X;  
PI Gusev VY, Herrmann JL, Ji W, Kekuda R, Li L, Liu X, Macdougall JR;  
PI Maclachlan T, Malyankar UM, Mezick AJ, Millet I, Mishra VS;  
PI Padigar M, Patturajan M, Pena CEA, Peyman JA, Raha D, Rastelli L;  
PI Rieger DK, Rothenberg ME, Sciore P, Shenoy SG, Shimkets RA;  
PI Smithson G, Spytek KA, Stone DJ, Vernet CAM, Voss EZ, Zhong M;  
PI Zhong H;

XX

DR WPI; 2004-081935/08.

DR N-PSDB; ADH71619.

XX

PT New NOVX polypeptides and nucleic acid molecules useful for preventing or  
PT treating NOVX-associated disorders, e.g. cancer, diabetes, infection or  
PT obesity, and in chromosome mapping, tissue typing or pharmacogenomics.

XX

PS Example 21; SEQ ID NO 516; 1880pp; English.

XX

CC The invention relates to a novel isolated polypeptide (NOVX). A  
CC polypeptide of the invention has cytostatic, immunomodulator,  
CC neuroprotective, nootropic, anorectic, antidiabetic, antimicrobial, and  
CC antilipaemic activity, and may have a use in gene therapy, and as a  
CC vaccine. The polypeptides are encoded by NOVX polynucleotides comprising  
CC any of the 303 fully defined nucleotide sequences given in the  
CC specification. The polypeptide is useful in the manufacture of a  
CC medicament for treating a syndrome associated with a human disease. The

CC polypeptide, polynucleotide and antibody are useful in diagnosing,  
CC treating or preventing NOVX-associated disorders, e.g. cancer, cachexia,  
CC Alzheimer's disease, Parkinson's disease, obesity, diabetes, infectious  
CC diseases, metabolic syndrome X or dyslipidaemias. The nucleic acids are  
CC further used as hybridisation probes, in chromosome mapping, tissue  
CC typing, preventive medicine, and pharmacogenomics. The present sequence  
CC represents a NOVX polypeptide of the invention.

XX

SQ Sequence 330 AA;

Query Match 100.0%; Score 290; DB 8; Length 330;

Best Local Similarity 100.0%; Pred. No. 8.4e-25;

Matches 50; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSCNTPAPLNGGAFCEGQNVQKTACATLC 50  
|||||

Db 221 STWTEWSVCSASCGRGWQKRSRSCNTPAPLNGGAFCEGQNVQKTACATLC 270

## RESULT 2

ADH71614

ID ADH71614 standard; protein; 336 AA.

XX

AC ADH71614;

XX

DT 25-MAR-2004 (first entry)

XX

DE Human protein of the invention NOV21c SEQ ID NO:510.

XX

KW human; cytostatic; immunomodulator; neuroprotective; nootropic;

KW anorectic; antidiabetic; antimicrobial; antilipaemic; gene therapy;

KW vaccine; cancer; cachexia; Alzheimer's disease; Parkinson's disease;

KW obesity; diabetes; infectious disease; metabolic syndrome X;

KW dyslipidaemia.

XX

OS Homo sapiens.

XX

PN WO2003102155-A2.

XX

PD 11-DEC-2003.

XX

PF 03-JUN-2003; 2003WO-US017430.

XX

PR 03-JUN-2002; 2002US-0385120P.

PR 04-JUN-2002; 2002US-0385784P.

PR 05-JUN-2002; 2002US-0386041P.

PR 05-JUN-2002; 2002US-0386047P.

PR 06-JUN-2002; 2002US-0386376P.

PR 06-JUN-2002; 2002US-0386453P.

PR 06-JUN-2002; 2002US-0386864P.

PR 06-JUN-2002; 2002US-0387016P.

PR 07-JUN-2002; 2002US-0386796P.

PR 07-JUN-2002; 2002US-0386816P.

PR 07-JUN-2002; 2002US-0386931P.

PR 07-JUN-2002; 2002US-0386942P.

PR 07-JUN-2002; 2002US-0386971P.

PR 07-JUN-2002; 2002US-0387262P.

PR 08-JUN-2002; 2002US-0296960P.  
PR 10-JUN-2002; 2002US-0387400P.  
PR 10-JUN-2002; 2002US-0387535P.  
PR 11-JUN-2002; 2002US-0387610P.  
PR 11-JUN-2002; 2002US-0387625P.  
PR 11-JUN-2002; 2002US-0387634P.  
PR 11-JUN-2002; 2002US-0387668P.  
PR 11-JUN-2002; 2002US-0387696P.  
PR 11-JUN-2002; 2002US-0387702P.  
PR 11-JUN-2002; 2002US-0387836P.  
PR 11-JUN-2002; 2002US-0387859P.  
PR 12-JUN-2002; 2002US-0387933P.  
PR 12-JUN-2002; 2002US-0387934P.  
PR 12-JUN-2002; 2002US-0387960P.  
PR 12-JUN-2002; 2002US-0388022P.  
PR 12-JUN-2002; 2002US-0388096P.  
PR 13-JUN-2002; 2002US-0389123P.  
PR 14-JUN-2002; 2002US-0389118P.  
PR 14-JUN-2002; 2002US-0389120P.  
PR 14-JUN-2002; 2002US-0389144P.  
PR 14-JUN-2002; 2002US-0389146P.  
PR 17-JUN-2002; 2002US-0389729P.  
PR 17-JUN-2002; 2002US-0389742P.  
PR 18-JUN-2002; 2002US-0389884P.  
PR 19-JUN-2002; 2002US-0390006P.  
PR 19-JUN-2002; 2002US-0390209P.  
PR 21-JUN-2002; 2002US-0390763P.  
PR 17-JUL-2002; 2002US-0396706P.  
PR 06-AUG-2002; 2002US-0401628P.  
PR 09-AUG-2002; 2002US-0402156P.  
PR 09-AUG-2002; 2002US-0402256P.  
PR 09-AUG-2002; 2002US-0402389P.  
PR 12-AUG-2002; 2002US-0402786P.  
PR 12-AUG-2002; 2002US-0402816P.  
PR 12-AUG-2002; 2002US-0402821P.  
PR 12-AUG-2002; 2002US-0402832P.  
PR 13-AUG-2002; 2002US-0403448P.  
PR 13-AUG-2002; 2002US-0403459P.  
PR 13-AUG-2002; 2002US-0403531P.  
PR 13-AUG-2002; 2002US-0403532P.  
PR 13-AUG-2002; 2002US-0403563P.  
PR 13-AUG-2002; 2002US-0406317P.  
PR 15-AUG-2002; 2002US-0403617P.  
PR 26-AUG-2002; 2002US-0406182P.  
PR 26-AUG-2002; 2002US-0406355P.  
PR 27-AUG-2002; 2002US-0406240P.  
PR 12-SEP-2002; 2002US-0410084P.  
PR 20-SEP-2002; 2002US-0412528P.  
PR 23-SEP-2002; 2002US-0412731P.  
PR 30-SEP-2002; 2002US-0414801P.  
PR 30-SEP-2002; 2002US-0414839P.  
PR 30-SEP-2002; 2002US-0414840P.  
PR 30-SEP-2002; 2002US-0414954P.  
PR 09-OCT-2002; 2002US-0417186P.  
PR 09-OCT-2002; 2002US-0417406P.  
PR 23-OCT-2002; 2002US-0420639P.  
PR 28-OCT-2002; 2002US-0421156P.

PR 31-OCT-2002; 2002US-0422690P.  
PR 01-NOV-2002; 2002US-0423130P.  
PR 05-NOV-2002; 2002US-00423798.  
PR 05-NOV-2002; 2002US-0423798P.  
PR 12-NOV-2002; 2002US-0425453P.

XX

PA (CURA-) CURAGEN CORP.

XX

PI Alsobrook JP, Alvarez E, Anderson DW, Boldog FL, Casman SJ;  
PI Catterton E, Chapoval A, Crabtree-Bokor JR, Edinger SR, Ellerman K;  
PI Ettenberg S, Gangolli EA, Gerlach VL, Gorman L, Gunther E, Guo X;  
PI Gusev VY, Herrmann JL, Ji W, Kekuda R, Li L, Liu X, Macdougall JR;  
PI Maclachlan T, Malyankar UM, Mezick AJ, Millet I, Mishra VS;  
PI Padigar M, Patturajan M, Pena CEA, Peyman JA, Raha D, Rastelli L;  
PI Rieger DK, Rothenberg ME, Sciore P, Shenoy SG, Shimkets RA;  
PI Smithson G, Spytek KA, Stone DJ, Vernet CAM, Voss EZ, Zhong M;  
PI Zhong H;

XX

DR WPI; 2004-081935/08.

DR N-PSDB; ADH71613.

XX

PT New NOVX polypeptides and nucleic acid molecules useful for preventing or  
PT treating NOVX-associated disorders, e.g. cancer, diabetes, infection or  
PT obesity, and in chromosome mapping, tissue typing or pharmacogenomics.

XX

PS Example 21; SEQ ID NO 510; 1880pp; English.

XX

CC The invention relates to a novel isolated polypeptide (NOVX). A  
CC polypeptide of the invention has cytostatic, immunomodulator,  
CC neuroprotective, nootropic, anorectic, antidiabetic, antimicrobial, and  
CC antilipaemic activity, and may have a use in gene therapy, and as a  
CC vaccine. The polypeptides are encoded by NOVX polynucleotides comprising  
CC any of the 303 fully defined nucleotide sequences given in the  
CC specification. The polypeptide is useful in the manufacture of a  
CC medicament for treating a syndrome associated with a human disease. The  
CC polypeptide, polynucleotide and antibody are useful in diagnosing,  
CC treating or preventing NOVX-associated disorders, e.g. cancer, cachexia,  
CC Alzheimer's disease, Parkinson's disease, obesity, diabetes, infectious  
CC diseases, metabolic syndrome X or dyslipidaemias. The nucleic acids are  
CC further used as hybridisation probes, in chromosome mapping, tissue  
CC typing, preventive medicine, and pharmacogenomics. The present sequence  
CC represents a NOVX polypeptide of the invention.

XX

SQ Sequence 336 AA;

Query Match 100.0%; Score 290; DB 8; Length 336;  
Best Local Similarity 100.0%; Pred. No. 8.6e-25;  
Matches 50; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50  
|  
Db 224 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 273

RESULT 3

AAW78898

ID AAW78898 standard; protein; 898 AA.

XX  
 AC AAW78898;  
 XX  
 DT 25-MAR-2003 (revised)  
 DT 21-DEC-1998 (first entry)  
 XX  
 DE Rat UNC-5 homologue UNC5H-1.  
 XX  
 KW UNC-5; UNC5H-1; rat; netrin receptor; cell migration; axon guidance;  
 KW diagnosis; therapy.  
 XX  
 OS Rattus sp.  
 XX  
 FH Key Location/Qualifiers  
 FT Peptide 580. .594  
 FT /note= "peptide used to raise rabbit polyclonal antisera"  
 XX  
 PN WO9837085-A1.  
 XX  
 PD 27-AUG-1998.  
 XX  
 PF 19-FEB-1998; 98WO-US003143.  
 XX  
 PR 19-FEB-1997; 97US-00808982.  
 XX  
 PA (REGC ) UNIV CALIFORNIA.  
 XX  
 PI Tessier-Lavigne M, Leonardo ED, Hinck L, Masu M, Keinomasu K;  
 XX  
 DR WPI; 1998-495364/42.  
 DR N-PSDB; AAV52940.  
 XX  
 PT Netrin-binding, vertebrate proteins - useful for diagnosis, therapy and  
 PT the biopharmaceutical industry.  
 XX  
 PS Claim 1; Page 19-22; 32pp; English.  
 XX  
 CC UNC5H-1 and UNC5H-2 (see AAW78900) are rat homologues of Caenorhabditis  
 CC elegans UNC-5 protein. Their amino acid sequences were deduced from  
 CC isolated unc5h cDNA clones (see AAV52940 and AAV52942) isolated from an  
 CC E18 brain cDNA library. The predicted proteins show similarity with UNC-  
 CC 5, possess 2 predicted Ig-like domains and 2 predicted thrombospondin  
 CC type-1 repeats, a predicted membrane spanning region, and a large  
 CC intracellular domain. They are predicted to be involved in cell migration  
 CC and axon guidance, and are characterised as receptor proteins for  
 CC netrins. Human UNC5H-1 (see AAW78899) and UNC5H-2 (see AAW78901) proteins  
 CC are also claimed. Vertebrate UNC-5 proteins may be produced recombinantly  
 CC from transfected host cells. The invention also provides unc-5  
 CC hybridisation probes and primers, vertebrate UNC-5-specific binding  
 CC agents such as specific antibodies, and methods of making and using the  
 CC subject compositions in diagnosis (e.g. genetic hybridisation screens for  
 CC vertebrate unc-5 transcripts), therapy (e.g. gene therapy to modulate  
 CC vertebrate unc-5 gene expression) and in the biopharmaceutical industry  
 CC (e.g. as immunogens, reagents for modulating cell guidance, reagents for  
 CC screening chemical libraries for lead pharmacological agents, etc.).  
 CC (Updated on 25-MAR-2003 to correct PI field.)  
 XX



SQ Sequence 898 AA;

Query Match 100.0%; Score 290; DB 2; Length 898;  
Best Local Similarity 100.0%; Pred. No. 2.3e-24;  
Matches 50; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSCNPAPLNGGAFCEGQNVQKTACATLC 50  
 |||  
 Db 246 STWTEWSVCSASCGRGWQKRSRSCNPAPLNGGAFCEGONVOKTACATLC 295

### RESULT 4

AAU10543

ID AAU10543 standard; protein; 898 AA.

XX

AC    AAU10543;

XX

DT 14-FEB-2002 (first entry)

XX

DE Rat netrin receptor UNC5H1 (YSG7) polypeptide.

XX

KW YSG; YSG7; schizophrenia; chronic animal model; LCGU; netrin receptor;

KW local cerebral glucose utilisation; phosphodiesterase 1-alpha; UNC5H1;

KW calcium-independent alpha-latrotoxin receptor; CIRL; trkE; synapsin 1A;

KW epithelial discoidin domain receptor 1; synapsin 1B; neuroleptic;

KW    tumour necrosis factor alpha; TNF-alpha; rat.

XX

OS     Rattus sp.

XX

PN WO200175440-A2.

XX

PD 11-OCT-2001.

XX

PF 02-APR-2001; 2001WO-GB001486.

XX

PR 31-MAR-2000; 2000GB-00007880.

PR 26-MAY-2000; 2000GB-00012768.

XX

PA (WELF-) WELFIDE CORP.

XX

PI Cochran S, Paterson G, Ohashi Y, Morris B, Pratt J;

XX

DR WPI; 2002-010813/01.

DR N-PSDB; AAS16843.

XX

PT Novel chronic animal model of schizophrenia, useful for identifying anti-  
PT psychotic drugs and genes that are associated with schizophrenia.

XX

PS Disclosure; Fig 8b; 79pp; English.

XX

CC The invention relates to YSG polynucleotide fragments for use in  
CC diagnosing and/or developing treatments for schizophrenia using chronic  
CC animal models. The polynucleotides and their encoded polypeptides are  
CC used for identification of compounds which modulate the expression of YSG  
CC molecules, leading to the manufacture of schizophrenia medicaments. The  
CC sequences can also be used for testing candidate compounds for any effect  
CC on the polypeptides. Anti-schizophrenic effects of a compound can be



PR 15-AUG-2000; 2000US-0225392P.  
PR 15-AUG-2000; 2000US-0225470P.  
PR 16-AUG-2000; 2000US-0225697P.  
PR 01-FEB-2001; 2001US-0263662P.  
PR 05-APR-2001; 2001US-0281645P.

XX

PA (CURA-) CURAGEN CORP.

XX

PI Padigar M, Mezes P, Mishra V, Burgess C, Casman S, Grosse WM;  
PI Alsobrook JP, Lepley DM, Gerlach VL, Macdougall JR, Smithson G;

XX

DR WPI; 2002-180074/23.

DR N-PSDB; ABK37922.

XX

PT New isolated cytoplasmic, nuclear, membrane bound, or secreted  
PT polypeptide, useful for treating cardiomyopathy, atherosclerosis,  
PT infections, cancer, neurodegenerative, metabolic, hematopoietic and  
PT immune disorders.

XX

PS Claim 1; Page 11; 213pp; English.

XX

CC The invention relates to an isolated cytoplasmic, nuclear, membrane  
CC bound, or secreted polypeptide (NOVX, x= 1-14) their variants or mature  
CC form. Also included are the nucleic acids encoding the NOVX proteins, a  
CC vector comprising the nucleic acid, a cell comprising the vector, an anti  
CC -NOVX antibody and modulators of NOVX. NOVX, the nucleic acid and the  
CC antibody are useful for treating or preventing a NOVX-associated  
CC disorder, where the disorder is selected from cardiomyopathy,  
CC atherosclerosis, diabetes, a disorder related to cell signal processing  
CC and metabolic pathway modulation, metabolic disorders, obesity,  
CC infectious disease, anorexia, cancer-associated cachexia, cancer,  
CC neurodegenerative disorders, Alzheimer's disease, Parkinson's disease,  
CC immune disorders, haematopoietic disorders, and the various  
CC dyslipidaemias, metabolic disturbances associated with obesity, the  
CC metabolic syndrome X and wasting disorders associated with chronic  
CC diseases, bacterial, fungal, protozoal and viral infections, pain,  
CC bulimia, asthma, hypertension, urinary retention, osteoporosis, Crohn's  
CC disease, multiple sclerosis, Albright Hereditary Osteodystrophy, angina  
CC pectoris, myocardial infarction, ulcer, allergy, benign prostatic  
CC hypertrophy, and psychotic and neurological disorders, including anxiety,  
CC schizophrenia, manic depression, delirium, dementia, and dyskinesias,  
CC such as Huntington's disease and Gilles de la Tourette's syndrome. The  
CC nucleic acid is useful in gene therapy. The present sequence represents a  
CC NOVX protein

XX

SQ Sequence 898 AA;...

Query Match 100.0%; Score 290; DB 5; Length 898;

Best Local Similarity 100.0%; Pred. No. 2.3e-24;

Matches 50; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACATLC 50

|||||

Db 246 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACATLC 295

RESULT 6

AAU97899

ID AAU97899 standard; protein; 898 AA.

XX

AC AAU97899;

XX

DT 27-AUG-2002 (first entry)

XX

DE Human netrin binding membrane receptor UNC5H-1 protein.

XX

KW Netrin binding membrane receptor; receptor; UNC5H-1; human; nootropic;  
 KW neuroprotective; cytostatic; antiparkinsonian; cerebroprotective; cancer;  
 KW central nervous system; CNS; stroke; Parkinson's disease;  
 KW multiple sclerosis; Alzheimer's disease.

XX

OS Homo sapiens.

XX

FH	Key	Location/Qualifiers
FT	Domain	152. .223
FT		/note= "Immunoglobulin domain "
FT	Domain	247. .294
FT		/note= "Thrombospondine type 1 domain "
FT	Domain	302. .348
FT		/note= "Thrombospondine type 1 domain"
FT	Region	361. .382
FT		/note= "Transmembrane region"
FT	Domain	495. .598
FT		/note= "ZU5 domain"
FT	Domain	817. .897
FT		/note= "Death domain"

XX

PN WO200233080-A2.

XX

PD 25-APR-2002.

XX

PF 15-OCT-2001; 2001WO-EP011891.

XX

PR 16-OCT-2000; 2000US-0240061P.

XX

PA (FARB ) BAYER AG.

XX

PI Koehler RH;

XX

DR WPI; 2002-463314/49.

DR N-PSDB; ABK52891.

XX

PT Novel human netrin binding membrane receptor polypeptide and  
 PT polynucleotides for identifying modulating agents useful in treating  
 PT diseases e.g. Parkinson's disease, multiple sclerosis, stroke,  
 PT Alzheimer's disease.

XX

PS Claim 1; Fig 2; 94pp; English.

XX

CC This invention relates to the DNA and protein sequences of a novel  
 CC purified human netrin binding membrane receptor, UNC5H-1. The DNA  
 CC sequence of the invention is useful as a probe for detecting a nucleic  
 CC acid encoding the UNC5H-1 protein in a biological sample. The sequences  
 CC of the invention are useful to screen for agents which decrease the

CC activity of the UNC5H-1 protein. The sequences are also useful for  
 CC screening agents which regulate (modulate) the activity of the protein of  
 CC the invention. A pharmaceutical composition containing the protein of the  
 CC invention or a reagent that modulates the activity of the UNC5H-1 protein  
 CC may be useful for treating a UNC5H-1 dysfunction related disease such as  
 CC cancer or a central nervous system (CNS) disorders (e.g, Parkinson's  
 CC disease, multiple sclerosis, stroke and Alzheimer's disease). Fusion  
 CC proteins comprising the UNC5H-1 protein are useful for generating  
 CC antibodies and for in various assay systems, and the protein can be used  
 CC as a bait protein in a two-hybrid assay or three-hybrid assay. The method  
 CC of the invention is useful for detecting a coding sequence for the UNC5H-  
 CC 1 protein. The present sequence represents the human netrin binding  
 CC membrane receptor UNC5H-1 protein of the invention

XX

SQ Sequence 898 AA;

Query Match 100.0%; Score 290; DB 5; Length 898;  
 Best Local Similarity 100.0%; Pred. No. 2.3e-24;  
 Matches 50; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 STWTEWSVCSASCGRGWQKRSRSCNTPAPLNGGAFCEGQNVQKTACATLC 50  
 ||||||||||||||||||||||||||||||||||||||||||||||||||||  
 Db 246 STWTEWSVCSASCGRGWQKRSRSCNTPAPLNGGAFCEGQNVQKTACATLC 295

RESULT 7

AAU97900

ID AAU97900 standard; protein; 898 AA.

XX

AC AAU97900;

XX

DT 27-AUG-2002 (first entry)

XX

DE Rat netrin binding membrane receptor UNC5H-1 protein.

XX

KW Netrin binding membrane receptor; receptor; UNC5H-1; Rat; nootropic;  
 KW neuroprotective; cytostatic; antiparkinsonian; cerebroprotective; cancer;  
 KW central nervous system; CNS; stroke; Parkinson's disease;  
 KW multiple sclerosis; Alzheimer's disease.

XX

OS Rattus sp.

XX

FH Key Location/Qualifiers

FT Domain 152. .223

FT /note= "Immunoglobulin domain "

FT Domain 247. .294

FT /note= "Thrombospondine type 1 domain "

FT Domain 302. .348

FT /note= "Thrombospondine type 1 domain"

FT Region 361. .382

FT /note= "Transmembrane region"

FT Domain 495. .598

FT /note= "ZU5 domain"

FT Domain 817. .897

FT /note= "Death domain"

XX

PN WO200233080-A2.

XX  
 PD 25-APR-2002.  
 XX  
 PF 15-OCT-2001; 2001WO-EP011891.  
 XX  
 PR 16-OCT-2000; 2000US-0240061P.  
 XX  
 PA (FARB ) BAYER AG.  
 XX  
 PI Koehler RH;  
 XX  
 DR WPI; 2002-463314/49.  
 XX  
 PT Novel human netrin binding membrane receptor polypeptide and  
 PT polynucleotides for identifying modulating agents useful in treating  
 PT diseases e.g. Parkinson's disease, multiple sclerosis, stroke,  
 PT Alzheimer's disease.  
 XX  
 PS Disclosure; Fig 3; 94pp; English.  
 XX  
 CC This invention relates to the DNA and protein sequences of a novel  
 CC purified human netrin binding membrane receptor, UNC5H-1. The DNA  
 CC sequence of the invention is useful as a probe for detecting a nucleic  
 CC acid encoding the UNC5H-1 protein in a biological sample. The sequences  
 CC of the invention are useful to screen for agents which decrease the  
 CC activity of the UNC5H-1 protein. The sequences are also useful for  
 CC screening agents which regulate (modulate) the activity of the protein of  
 CC the invention. A pharmaceutical composition containing the protein of the  
 CC invention or a reagent that modulates the activity of the UNC5H-1 protein  
 CC may be useful for treating a UNC5H-1 dysfunction related disease such as  
 CC cancer or a central nervous system (CNS) disorders (e.g, Parkinson's  
 CC disease, multiple sclerosis, stroke and Alzheimer's disease). Fusion  
 CC proteins comprising the UNC5H-1 protein are useful for generating  
 CC antibodies and for in various assay systems, and the protein can be used  
 CC as a bait protein in a two-hybrid assay or three-hybrid assay. The method  
 CC of the invention is useful for detecting a coding sequence for the UNC5H-  
 CC 1 protein. The present sequence represents the Rat netrin binding  
 CC membrane receptor UNC5H-1 protein of the invention  
 XX  
 SQ Sequence 898 AA;

Query Match 100.0%; Score 290; DB 5; Length 898;  
 Best Local Similarity 100.0%; Pred. No. 2.3e-24;  
 Matches 50; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACATLC 50  
 ||||||||||||||||||||||||||||||||||||||||||||  
 Db 246 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACATLC 295

RESULT 8  
 ADG42580  
 ID ADG42580 standard; protein; 898 AA.  
 XX  
 AC ADG42580;  
 XX  
 DT 26-FEB-2004 (first entry)

XX  
 DE Rat transmembrane receptor Unc5H1.  
 XX  
 KW cytostatic; gene therapy; NOVX-agonist; NOVX-antagonist; pharmaceutical;  
 KW NOVX-associated disorder; cancer; rat; transmembrane receptor; Unc5H1.  
 XX  
 OS Rattus norvegicus.  
 XX  
 PN US2003204052-A1.  
 XX  
 PD 30-OCT-2003.  
 XX  
 PF 04-OCT-2001; 2001US-00970944.  
 XX  
 PR 04-OCT-2000; 2000US-0237862P.  
 XX  
 PA (HERR/) HERRMANN J L.  
 PA (RAST/) RASTELLI L.  
 PA (SHIM/) SHIMKETS R A.  
 XX  
 PI Herrmann JL, Rastelli L, Shimkets RA;  
 XX  
 DR WPI; 2003-900673/82.  
 XX  
 PT New NOVX gene or NOVX-specific antibody, useful for preparing a  
 PT composition for treating or preventing a NOVX-associated disorder, e.g.,  
 PT cancer.  
 XX  
 PS Disclosure; SEQ ID NO 13; 118pp; English.  
 XX  
 CC The invention describes a new isolated polypeptide comprising: a  
 CC polypeptide or its mature form comprising a sequence not given in the  
 CC specification; or a variant of (A), where one or more amino acid residues  
 CC in the variant differs in no more than 15% from the amino acid sequence  
 CC of the mature form. The pharmaceutical composition may be administered  
 CC via oral, transdermal, rectal or parenteral route. The polypeptide,  
 CC nucleic acid or antibody is useful for preparing a composition for  
 CC treating or preventing a NOVX-associated disorder, e.g., cancer. This is  
 CC the amino acid sequence of a transmembrane receptor Unc5H1 used in a  
 CC comparison with the novel human proteins of the invention.  
 XX  
 SQ Sequence 898 AA;

Query Match 100.0%; Score 290; DB 7; Length 898;  
 Best Local Similarity 100.0%; Pred. No. 2.3e-24;  
 Matches 50; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACATLC 50  
 ||||||||||||||||||||||||||||||||||||||||||||  
 Db 246 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACATLC 295

RESULT 9  
 ADH71618  
 ID ADH71618 standard; protein; 898 AA.  
 XX  
 AC ADH71618;

XX  
DT 25-MAR-2004 (first entry)  
XX  
DE Human protein of the invention NOV21e SEQ ID NO:514.  
XX  
KW human; cytostatic; immunomodulator; neuroprotective; nootropic;  
KW anorectic; antidiabetic; antimicrobial; antilipaemic; gene therapy;  
KW vaccine; cancer; cachexia; Alzheimer's disease; Parkinson's disease;  
KW obesity; diabetes; infectious disease; metabolic syndrome X;  
KW dyslipidaemia.  
XX  
OS Homo sapiens.  
XX  
PN WO2003102155-A2.  
XX  
PD 11-DEC-2003.  
XX  
PF 03-JUN-2003; 2003WO-US017430.  
XX  
PR 03-JUN-2002; 2002US-0385120P.  
PR 04-JUN-2002; 2002US-0385784P.  
PR 05-JUN-2002; 2002US-0386041P.  
PR 05-JUN-2002; 2002US-0386047P.  
PR 06-JUN-2002; 2002US-0386376P.  
PR 06-JUN-2002; 2002US-0386453P.  
PR 06-JUN-2002; 2002US-0386864P.  
PR 06-JUN-2002; 2002US-0387016P.  
PR 07-JUN-2002; 2002US-0386796P.  
PR 07-JUN-2002; 2002US-0386816P.  
PR 07-JUN-2002; 2002US-0386931P.  
PR 07-JUN-2002; 2002US-0386942P.  
PR 07-JUN-2002; 2002US-0386971P.  
PR 07-JUN-2002; 2002US-0387262P.  
PR 08-JUN-2002; 2002US-0296960P.  
PR 10-JUN-2002; 2002US-0387400P.  
PR 10-JUN-2002; 2002US-0387535P.  
PR 11-JUN-2002; 2002US-0387610P.  
PR 11-JUN-2002; 2002US-0387625P.  
PR 11-JUN-2002; 2002US-0387634P.  
PR 11-JUN-2002; 2002US-0387668P.  
PR 11-JUN-2002; 2002US-0387696P.  
PR 11-JUN-2002; 2002US-0387702P.  
PR 11-JUN-2002; 2002US-0387836P.  
PR 11-JUN-2002; 2002US-0387859P.  
PR 12-JUN-2002; 2002US-0387933P.  
PR 12-JUN-2002; 2002US-0387934P.  
PR 12-JUN-2002; 2002US-0387960P.  
PR 12-JUN-2002; 2002US-0388022P.  
PR 12-JUN-2002; 2002US-0388096P.  
PR 13-JUN-2002; 2002US-0389123P.  
PR 14-JUN-2002; 2002US-0389118P.  
PR 14-JUN-2002; 2002US-0389120P.  
PR 14-JUN-2002; 2002US-0389144P.  
PR 14-JUN-2002; 2002US-0389146P.  
PR 17-JUN-2002; 2002US-0389729P.  
PR 17-JUN-2002; 2002US-0389742P.  
PR 18-JUN-2002; 2002US-0389884P.



PR 19-JUN-2002; 2002US-0390006P.  
PR 19-JUN-2002; 2002US-0390209P.  
PR 21-JUN-2002; 2002US-0390763P.  
PR 17-JUL-2002; 2002US-0396706P.  
PR 06-AUG-2002; 2002US-0401628P.  
PR 09-AUG-2002; 2002US-0402156P.  
PR 09-AUG-2002; 2002US-0402256P.  
PR 09-AUG-2002; 2002US-0402389P.  
PR 12-AUG-2002; 2002US-0402786P.  
PR 12-AUG-2002; 2002US-0402816P.  
PR 12-AUG-2002; 2002US-0402821P.  
PR 12-AUG-2002; 2002US-0402832P.  
PR 13-AUG-2002; 2002US-0403448P.  
PR 13-AUG-2002; 2002US-0403459P.  
PR 13-AUG-2002; 2002US-0403531P.  
PR 13-AUG-2002; 2002US-0403532P.  
PR 13-AUG-2002; 2002US-0403563P.  
PR 13-AUG-2002; 2002US-0406317P.  
PR 15-AUG-2002; 2002US-0403617P.  
PR 26-AUG-2002; 2002US-0406182P.  
PR 26-AUG-2002; 2002US-0406355P.  
PR 27-AUG-2002; 2002US-0406240P.  
PR 12-SEP-2002; 2002US-0410084P.  
PR 20-SEP-2002; 2002US-0412528P.  
PR 23-SEP-2002; 2002US-0412731P.  
PR 30-SEP-2002; 2002US-0414801P.  
PR 30-SEP-2002; 2002US-0414839P.  
PR 30-SEP-2002; 2002US-0414840P.  
PR 30-SEP-2002; 2002US-0414954P.  
PR 09-OCT-2002; 2002US-0417186P.  
PR 09-OCT-2002; 2002US-0417406P.  
PR 23-OCT-2002; 2002US-0420639P.  
PR 28-OCT-2002; 2002US-0421156P.  
PR 31-OCT-2002; 2002US-0422690P.  
PR 01-NOV-2002; 2002US-0423130P.  
PR 05-NOV-2002; 2002US-00423798.  
PR 05-NOV-2002; 2002US-0423798P.  
PR 12-NOV-2002; 2002US-0425453P.

XX

PA (CURA-) CURAGEN CORP.

XX

PI Alsobrook JP, Alvarez E, Anderson DW, Boldog FL, Casman SJ;  
PI Catterton E, Chapoval A, Crabtree-Bokor JR, Edinger SR, Ellerman K;  
PI Ettenberg S, Gangolli EA, Gerlach VL, Gorman L, Gunther E, Guo X;  
PI Gusev VY, Herrmann JL, Ji W, Kekuda R, Li L, Liu X, Macdougall JR;  
PI Maclachlan T, Malyankar UM, Mezick AJ, Millet I, Mishra VS;  
PI Padigar M, Patturajan M, Pena CEA, Peyman JA, Raha D, Rastelli L;  
PI Rieger DK, Rothenberg ME, Sciore P, Shenoy SG, Shimkets RA;  
PI Smithson G, Spytek KA, Stone DJ, Vernet CAM, Voss EZ, Zhong M;  
PI Zhong H;

XX

DR WPI; 2004-081935/08.

DR N-PSDB; ADH71617.

XX

PT New NOVX polypeptides and nucleic acid molecules useful for preventing or  
PT treating NOVX-associated disorders, e.g. cancer, diabetes, infection or  
PT obesity, and in chromosome mapping, tissue typing or pharmacogenomics.

XX  
 PS Example 21; SEQ ID NO 514; 1880pp; English.  
 XX  
 CC The invention relates to a novel isolated polypeptide (NOVX). A  
 CC polypeptide of the invention has cytostatic, immunomodulator,  
 CC neuroprotective, nootropic, anorectic, antidiabetic, antimicrobial, and  
 CC antilipaemic activity, and may have a use in gene therapy, and as a  
 CC vaccine. The polypeptides are encoded by NOVX polynucleotides comprising  
 CC any of the 303 fully defined nucleotide sequences given in the  
 CC specification. The polypeptide is useful in the manufacture of a  
 CC medicament for treating a syndrome associated with a human disease. The  
 CC polypeptide, polynucleotide and antibody are useful in diagnosing,  
 CC treating or preventing NOVX-associated disorders, e.g. cancer, cachexia,  
 CC Alzheimer's disease, Parkinson's disease, obesity, diabetes, infectious  
 CC diseases, metabolic syndrome X or dyslipidaemias. The nucleic acids are  
 CC further used as hybridisation probes, in chromosome mapping, tissue  
 CC typing, preventive medicine, and pharmacogenomics. The present sequence  
 CC represents a NOVX polypeptide of the invention.  
 XX  
 SQ Sequence 898 AA;

Query Match 100.0%; Score 290; DB 8; Length 898;  
 Best Local Similarity 100.0%; Pred. No. 2.3e-24;  
 Matches 50; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACATLC 50  
 ||||||||||||||||||||||||||||||||||||||||||||||||||||  
 Db 246 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACATLC 295

RESULT 10  
 AAM79128  
 ID AAM79128 standard; protein; 943 AA.  
 XX  
 AC AAM79128;  
 XX  
 DT 06-NOV-2001 (first entry)  
 XX  
 DE Human protein SEQ ID NO 1790.  
 XX  
 KW Human; cytokine; cell proliferation; cell differentiation; gene therapy;  
 KW vaccine; peptide therapy; stem cell growth factor; haematopoiesis;  
 KW tissue growth factor; immunomodulatory; cancer; leukaemia;  
 KW nervous system disorder; arthritis; inflammation.  
 XX  
 OS Homo.sapiens.  
 XX  
 PN WO200157190-A2.  
 XX  
 PD 09-AUG-2001.  
 XX  
 PF 05-FEB-2001; 2001WO-US004098.  
 XX  
 PR 03-FEB-2000; 2000US-00496914.  
 PR 27-APR-2000; 2000US-00560875.  
 PR 20-JUN-2000; 2000US-00598075.  
 PR 19-JUL-2000; 2000US-00620325.



KW vasotropic; osteopathic; antiarthritic; cytostatic; gene therapy;  
KW hyperlipidaemia; human; sUNC5C.  
XX  
OS Homo sapiens.  
XX  
PN WO2004083371-A2.  
XX  
PD 30-SEP-2004.  
XX  
PF 16-MAR-2004; 2004WO-GB001124.  
XX  
PR 19-MAR-2003; 2003GB-00006185.  
XX  
PA (ASTR ) ASTRAZENECA AB.  
PA (ASTR ) ASTRAZENECA UK LTD.  
XX  
PI Dahl N;  
XX  
DR WPI; 2004-691032/67.  
DR N-PSDB; ADR99261.  
XX  
PT New isolated nucleic acid molecule encoding a RAR-like orphan receptor  
PT alpha 1-uncoordinated 5C (RORapproximatelyal-UNC5C) polypeptide, useful  
PT in diagnosing or treating obesity and hyperlipidemia.  
XX  
PS Disclosure; SEQ ID NO 14; 96pp; English.  
XX  
CC The invention relates to a novel isolated nucleic acid molecule,  
CC comprising a nucleotide sequence having at least 65% identity to a  
CC degenerate variant of a fully defined sequence of 2986, 2780 or 1821 bp  
CC (ADR99249, ADR99251 or ADR99255), or the complement of nucleotide  
CC sequence with ADR99249, ADR99251 or ADR99255. The invention further  
CC comprises: an isolated nucleic acid molecule encoding a RAR-like orphan  
CC receptor alpha 1-uncoordinated 5C (ROR-alpha-1-UNC5C) polypeptide; an  
CC isolated nucleic acid molecule encoding a ROR-alpha-5 polypeptide; a  
CC vector comprising any of the nucleic acid molecules as cited; a host cell  
CC comprising the vector; a purified fusion polypeptide of the ROR-alpha-1-  
CC UNC5C polypeptide; a purified polypeptide of the ROR-alpha-5 polypeptide;  
CC a method for producing a protein comprising culturing the host cell; a  
CC method for detecting a polynucleotide which encodes a ROR-alpha-1-UNC5C  
CC protein; a method for detecting the presence of an obesity susceptibility  
CC gene; a method for detecting the presence of a translocation junction  
CC between chromosome 4 at cytoband 4q 22.3 and chromosome 15 at cytoband  
CC 15q22.2; a method for identifying a test compound that modulates the  
CC expression of an obesity susceptibility gene identified in said method; a  
CC method for identifying a test compound that modulates the activity of an  
CC obesity protein encoded by the obesity susceptibility gene identified in  
CC said method; a method for treating a subject having obesity; a  
CC pharmaceutical composition comprising a compound identified in the  
CC previous methods, and an adjuvant, diluent or carrier; making a  
CC pharmaceutical composition; a method for determining if an obesity  
CC susceptibility gene identified in the appropriate method; and a method  
CC for diagnosing obesity, or a susceptibility to it in a subject. The  
CC isolated nucleic acid molecules and compounds of the invention have the  
CC following activities: anorectic, antilipaemic, antiarteriosclerotic,  
CC hepatotropic, hypotensive, antidiabetic, cardiant, vasotropic,  
CC osteopathic, antiarthritic, and cytostatic. The isolated nucleic acid

CC molecules and compounds may be used in gene therapy. The compound  
CC modulating the activity of an obesity protein or the expression of an  
CC obesity susceptibility gene is useful in the preparation of a medicament  
CC for the treatment of obesity. The compound is also useful in treating or  
CC diagnosing hyperlipidaemia, and the consequences of obesity, such as  
CC arteriosclerosis, fatty liver, hypertension, diabetes, coronary heart  
CC disease, stroke, gallbladder disease, osteoarthritis and cancer. This  
CC sequence represents the alternative splice version of the human  
CC uncoordinated 5C (UNC5C) protein of the invention.

XX

SQ Sequence 636 AA;

Query Match 85.9%; Score 249; DB 8; Length 636;  
Best Local Similarity 82.0%; Pred. No. 7.5e-20;  
Matches 41; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50  
|||||||:: ||||:||||:|||||||:|||| || |||  
Db 264 STWTEWSVCNSRCGRGYQKRTRTCTNPAPLNGGAFCEGQSVQKIACCTTLC 313

#### RESULT 12

ADR99252

ID ADR99252 standard; protein; 669 AA.

XX

AC ADR99252;

XX

DT 16-DEC-2004 (first entry)

XX

DE Human sROR-alpha-1-UNC5C protein.

XX

KW RAR-like orphan receptor alpha 1-uncoordinated 5C; ROR-alpha-1-UNC5C;

KW ROR-alpha-5; obesity; susceptibility; anorectic; antilipaemic;

KW antiarteriosclerotic; hepatotropic; hypotensive; antidiabetic; cardiant;

KW vasotropic; osteopathic; antiarthritic; cytostatic; gene therapy;

KW hyperlipidaemia; human; sROR-alpha-1-UNC5C.

XX

OS Homo sapiens.

XX

PN WO2004083371-A2.

XX

PD 30-SEP-2004.

XX

PF 16-MAR-2004; 2004WO-GB001124.

XX

PR 19-MAR-2003; 2003GB-00006185.

XX

PA (ASTR ) ASTRAZENECA AB.

PA (ASTR ) ASTRAZENECA UK LTD.

XX

PI Dahl N;

XX

DR WPI; 2004-691032/67.

DR N-PSDB; ADR99251.

XX

PT New isolated nucleic acid molecule encoding a RAR-like orphan receptor

PT alpha 1-uncoordinated 5C (RORapproximatelyal-UNC5C) polypeptide, useful

PT in diagnosing or treating obesity and hyperlipidemia.  
XX  
PS Claim 9; SEQ ID NO 4; 96pp; English.  
XX  
CC The invention relates to a novel isolated nucleic acid molecule,  
CC comprising a nucleotide sequence having at least 65% identity to a  
CC degenerate variant of a fully defined sequence of 2986, 2780 or 1821 bp  
CC (ADR99249, ADR99251 or ADR99255), or the complement of nucleotide  
CC sequence with ADR99249, ADR99251 or ADR99255. The invention further  
CC comprises: an isolated nucleic acid molecule encoding a RAR-like orphan  
CC receptor alpha 1-uncoordinated 5C (ROR-alpha-1-UNC5C) polypeptide; an  
CC isolated nucleic acid molecule encoding a ROR-alpha-5 polypeptide; a  
CC vector comprising any of the nucleic acid molecules as cited; a host cell  
CC comprising the vector; a purified fusion polypeptide of the ROR-alpha-1-  
CC UNC5C polypeptide; a purified polypeptide of the ROR-alpha-5 polypeptide;  
CC a method for producing a protein comprising culturing the host cell; a  
CC method for detecting a polynucleotide which encodes a ROR-alpha-1-UNC5C  
CC protein; a method for detecting the presence of an obesity susceptibility  
CC gene; a method for detecting the presence of a translocation junction  
CC between chromosome 4 at cytoband 4q 22.3 and chromosome 15 at cytoband  
CC 15q22.2; a method for identifying a test compound that modulates the  
CC expression of an obesity susceptibility gene identified in said method; a  
CC method for identifying a test compound that modulates the activity of an  
CC obesity protein encoded by the obesity susceptibility gene identified in  
CC said method; a method for treating a subject having obesity; a  
CC pharmaceutical composition comprising a compound identified in the  
CC previous methods, and an adjuvant, diluent or carrier; making a  
CC pharmaceutical composition; a method for determining if an obesity  
CC susceptibility gene identified in the appropriate method; and a method  
CC for diagnosing obesity, or a susceptibility to it in a subject. The  
CC isolated nucleic acid molecules and compounds of the invention have the  
CC following activities: anorectic, antilipaemic, antiarteriosclerotic,  
CC hepatotropic, hypotensive, antidiabetic, cardiact, vasotropic,  
CC osteopathic, antiarthritic, and cytostatic. The isolated nucleic acid  
CC molecules and compounds may be used in gene therapy. The compound  
CC modulating the activity of an obesity protein or the expression of an  
CC obesity susceptibility gene is useful in the preparation of a medicament  
CC for the treatment of obesity. The compound is also useful in treating or  
CC diagnosing hyperlipidaemia, and the consequences of obesity, such as  
CC arteriosclerosis, fatty liver, hypertension, diabetes, coronary heart  
CC disease, stroke, gallbladder disease, osteoarthritis and cancer. This  
CC sequence represents the human sROR-alpha-1-UNC5C protein of the  
CC invention.

XX

SQ Sequence 669 AA;

Query Match 85.9%; Score 249; DB 8; Length 669;  
Best Local Similarity 82.0%; Pred. No. 7.9e-20;  
Matches 41; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

Qy 1 STWEWSVCSASCGRGWQKRSRSCNTPAPLNGGAFCEGQNVQKTACATLC 50  
|||||||:: ||||:||||:|||||||:||||| || |||  
Db 278 STWEWSVCNSRCGRGYQKRTRTCTNPAPLNGGAFCEGQSVQKIACTTLC 327

RESULT 13  
ADG42583



RESULT 14

AAB50691

ID AAB50691 standard; protein; 931 AA.

XX

AC AAB50691;

XX

DT 19-MAR-2001 (first entry)

XX

DE Human UNC5C protein SEQ ID NO:90.

XX

KW Human; Caenorhabditis elegans; UNC-5; splice variant; nematode worm;  
KW protein-protein interaction; identification.

XX

OS Homo sapiens.

XX

PN WO200073328-A2.

XX

PD 07-DEC-2000.

XX

PF 02-JUN-2000; 2000WO-EP005108.

XX

PR 01-JUN-1999; 99GB-00012755.

XX

PA (DEVG-) DEVGEN NV.

XX

PI Van Crielinge W, Roelens I, Bogaert T, Verwaerde P;

XX

DR WPI; 2001-016508/02.

XX

PT Three variants of human unc-5C cDNAs (unc-5Cb, unc-5Cc and unc-5C8) and a  
PT human unc-5HS1 cDNA, useful in yeast two hybrid experiments for  
PT identifying unknown human cDNAs which encode proteins that interact with  
PT the human unc-5C protein.

XX

PS Disclosure; Page 224-227; 246pp; English.

XX

CC The present invention describes 3 variants of human unc-5C cDNAs (unc-  
CC 5Cb, unc-5Cc and unc-5C8) which correspond to alternatively spliced unc-  
CC 5C transcripts, and a human unc-5HS1 cDNA which shares homology with the  
CC Rattus norvegicus unc-5HS1 cDNA. Also described are assays based on  
CC protein-protein-interactions between the unc-5 protein and a variety of  
CC different interacting proteins. The unc-5C variant cDNAs and unc-5HS1  
CC cDNA are useful in methods for identifying compounds which reduce or  
CC inhibit the lethal phenotype associated with the expression of the unc-5  
CC death domain in yeast. They are also useful in yeast two hybrid  
CC experiments for identifying unknown human cDNAs which encode proteins  
CC that interact with the human unc-5C protein. AAC90914 to AAC90971 and  
CC AAB50646 to AAB50693 represent sequences used in the exemplification of  
CC the present invention

XX

SQ Sequence 931 AA;

Query Match 85.9%; Score 249; DB 4; Length 931;

Best Local Similarity 82.0%; Pred. No. 1.1e-19;

Matches 41; Conservative 6; Mismatches 3; Indels 0; Gaps 0;



Qy 1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50  
|||||||:: ||||:||||:|||||||:|||| || |||  
Db 264 STWTEWSVCNSRCGRGYQKRTRTCTNPAPLNGGAFCEGQSVQKIACTTLC 313

RESULT 15

ADE63098

ID ADE63098 standard; protein; 931 AA.

XX

AC ADE63098;

XX

DT 29-JAN-2004 (first entry)

XX

DE Human Protein AAC67491, SEQ ID NO 9033.

XX

KW Human; pain; neuronal tissue; gene therapy;

KW spinal segmental nerve injury; chronic constriction injury; CCI;

KW spared nerve injury; SNI; Chung.

XX

OS Homo sapiens.

XX

PN WO2003016475-A2.

XX

PD 27-FEB-2003.

XX

PF 14-AUG-2002; 2002WO-US025765.

XX

PR 14-AUG-2001; 2001US-0312147P.

PR 01-NOV-2001; 2001US-0346382P.

PR 26-NOV-2001; 2001US-0333347P.

XX

PA (GEHO ) GEN HOSPITAL CORP.

PA (FARB ) BAYER AG.

XX

PI Woolf C, D'urso D, Befort K, Costigan M;

XX

DR WPI; 2003-268312/26.

DR GENBANK; AAC67491.

XX

PT New composition comprising two or more isolated polypeptides, useful for  
PT preparing a medicament for treating pain in an animal.

XX

PS Claim 1; Page; 1017pp; English.

XX

CC The invention discloses a composition comprising two or more isolated rat  
CC or human polynucleotides or a polynucleotide which represents a fragment,  
CC derivative or allelic variation of the nucleic acid sequence. Also  
CC claimed are a vector comprising the novel polynucleotide, a host cell  
CC comprising the vector, a method for identifying a nucleotide sequence  
CC which is differentially regulated in an animal subjected to pain and a  
CC kit to perform the method, an array, a method for identifying an agent  
CC that increases or decreases the expression of the polynucleotide sequence  
CC that is differentially expressed in neuronal tissue of a first animal  
CC subjected to pain, a method for identifying a compound which regulates  
CC the expression of a polynucleotide sequence which is differentially  
CC expressed in an animal subjected to pain, a method for identifying a  
CC compound that regulates the activity of one or more of the



OM protein - protein search, using sw model

Run on: March 1, 2005, 08:42:47 ; Search time 2.99591 Seconds  
(without alignments)  
1245.848 Million cell updates/sec

Title: US-10-624-932-2\_COPY\_246\_295  
Perfect score: 290  
Sequence: 1 STWTEWSVCSASCGRGWQKR.....NGGAFCEGQNVQKTACATLC 50

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 513545 seqs, 74649064 residues

Total number of hits satisfying chosen parameters: 513545

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : Issued\_Patents\_AA:\*

- 1: /cgn2\_6/ptodata/1/iaa/5A\_COMB.pep:\*
- 2: /cgn2\_6/ptodata/1/iaa/5B\_COMB.pep:\*
- 3: /cgn2\_6/ptodata/1/iaa/6A\_COMB.pep:\*
- 4: /cgn2\_6/ptodata/1/iaa/6B\_COMB.pep:\*
- 5: /cgn2\_6/ptodata/1/iaa/PCTUS\_COMB.pep:\*
- 6: /cgn2\_6/ptodata/1/iaa/backfiles1.pep:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	% Query		DB	ID	Description
		Match	Length			
1	290	100.0	898	2	US-08-808-982-5	Sequence 5, Appli
2	290	100.0	898	3	US-09-306-902A-5	Sequence 5, Appli
3	249	85.9	769	4	US-09-949-016-10665	Sequence 10665, A
4	238	82.1	943	2	US-08-808-982-7	Sequence 7, Appli
5	238	82.1	943	3	US-09-306-902A-7	Sequence 7, Appli
6	147	50.7	939	4	US-09-854-845-16	Sequence 16, Appl
7	147	50.7	954	4	US-09-854-845-14	Sequence 14, Appl
8	147	50.7	1034	4	US-09-854-845-6	Sequence 6, Appli
9	147	50.7	1049	4	US-09-854-845-2	Sequence 2, Appli
10	147	50.7	1078	4	US-09-854-845-8	Sequence 8, Appli
11	147	50.7	1093	4	US-09-854-845-4	Sequence 4, Appli

12	147	50.7	1136	4	US-09-854-845-12	Sequence 12, Appl
13	147	50.7	1151	4	US-09-854-845-10	Sequence 10, Appl
14	139	47.9	1224	4	US-09-930-872-4	Sequence 4, Appli
15	139	47.9	1224	4	US-10-217-774-4	Sequence 4, Appli
16	137	47.2	584	1	US-08-313-288B-17	Sequence 17, Appl
17	136	46.9	479	4	US-09-270-767-46823	Sequence 46823, A
18	136	46.9	481	4	US-09-130-491-8	Sequence 8, Appli
19	132	45.5	239	5	PCT-US93-01652-1	Sequence 1, Appli
20	132	45.5	837	4	US-09-122-126B-2	Sequence 2, Appli
21	132	45.5	837	4	US-09-634-286A-2	Sequence 2, Appli
22	132	45.5	837	4	US-10-247-685-2	Sequence 2, Appli
23	132	45.5	1170	4	US-09-657-472-2	Sequence 2, Appli
24	131	45.2	905	3	US-09-369-364A-9	Sequence 9, Appli
25	130	44.8	551	4	US-09-130-491-16	Sequence 16, Appl
26	130	44.8	608	4	US-09-130-491-13	Sequence 13, Appl
27	130	44.8	727	4	US-09-445-023A-1	Sequence 1, Appli
28	130	44.8	727	4	US-09-445-023A-12	Sequence 12, Appl
29	130	44.8	949	4	US-09-568-559-2	Sequence 2, Appli
30	130	44.8	950	4	US-09-321-987B-4	Sequence 4, Appli
31	130	44.8	967	4	US-09-130-491-2	Sequence 2, Appli
32	128.5	44.3	950	4	US-10-009-332-1	Sequence 1, Appli
33	128	44.1	1170	1	US-08-313-288B-20	Sequence 20, Appl
34	126	43.4	2150	4	US-09-321-987B-2	Sequence 2, Appli
35	126	43.4	2165	4	US-09-800-729-155	Sequence 155, App
36	122	42.1	321	4	US-09-969-532-24	Sequence 24, Appl
37	122	42.1	332	4	US-09-969-532-22	Sequence 22, Appl
38	122	42.1	335	4	US-09-969-532-20	Sequence 20, Appl
39	122	42.1	346	4	US-09-969-532-18	Sequence 18, Appl
40	122	42.1	552	4	US-09-969-532-8	Sequence 8, Appli
41	122	42.1	563	4	US-09-969-532-6	Sequence 6, Appli
42	122	42.1	566	4	US-09-969-532-4	Sequence 4, Appli
43	122	42.1	577	4	US-09-969-532-2	Sequence 2, Appli
44	122	42.1	655	4	US-09-969-532-32	Sequence 32, Appl
45	122	42.1	666	4	US-09-969-532-30	Sequence 30, Appl

#### ALIGNMENTS

#### RESULT 1

US-08-808-982-5

; Sequence 5, Application US/08808982

; Patent No. 5939271

; GENERAL INFORMATION:

; APPLICANT: Tessier-Lavigne, Marc

; APPLICANT: Leonardo, E. David

; APPLICANT: Hink, Lindsay

; APPLICANT: Masu, Masayuki

; APPLICANT: Kazuko, Keino-Masu

; TITLE OF INVENTION: Netrin Receptors

; NUMBER OF SEQUENCES: 8

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: SCIENCE & TECHNOLOGY LAW GROUP

; STREET: 268 BUSH STREET, SUITE 3200

; CITY: SAN FRANCISCO

; STATE: CALIFORNIA

; COUNTRY: USA

```

;      ZIP: 94104
;      COMPUTER READABLE FORM:
;      MEDIUM TYPE: Floppy disk
;      COMPUTER: IBM PC compatible
;      OPERATING SYSTEM: PC-DOS/MS-DOS
;      SOFTWARE: PatentIn Release #1.0, Version #1.30
;      CURRENT APPLICATION DATA:
;      APPLICATION NUMBER: US/08/808,982
;      FILING DATE:
;      CLASSIFICATION: 530
;      ATTORNEY/AGENT INFORMATION:
;      NAME: OSMAN, RICHARD A
;      REGISTRATION NUMBER: 36,627
;      REFERENCE/DOCKET NUMBER: UC96-217
;      TELECOMMUNICATION INFORMATION:
;      TELEPHONE: (415) 343-4341
;      TELEFAX: (415) 343-4342
;      INFORMATION FOR SEQ ID NO: 5:
;      SEQUENCE CHARACTERISTICS:
;      LENGTH: 898 amino acids
;      TYPE: amino acid
;      STRANDEDNESS: not relevant
;      TOPOLOGY: not relevant
;      MOLECULE TYPE: peptide
US-08-808-982-5

```

```

Query Match          100.0%; Score 290; DB 2; Length 898;
Best Local Similarity 100.0%; Pred. No. 3.6e-25;
Matches    50; Conservative    0; Mismatches    0; Indels    0; Gaps    0;

```

```

Qy      1 STWTEWSVCSASCGRGWQKRSRSC TNPAPLN GGAFCEGQNVQKTACATLC 50
        ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      246 STWTEWSVCSASCGRGWQKRSRSC TNPAPLN GGAFCEGQNVQKTACATLC 295

```

# RESULT 2

US-09-306-902A-5

```

; Sequence 5, Application US/09306902A
; Patent No. 6277585
;      GENERAL INFORMATION:
;      APPLICANT: Tessier-Lavigne, Marc
;                  Leonardo, E. David
;                  Hink, Lindsay
;                  Masu, Masayuki
;                  Kazuko, Keino-Masu
;      TITLE OF INVENTION: Netrin Receptors
;      NUMBER OF SEQUENCES: 9
;      CORRESPONDENCE ADDRESS:
;      ADDRESSEE: SCIENCE & TECHNOLOGY LAW GROUP
;      STREET: 268 BUSH STREET, SUITE 3200
;      CITY: SAN FRANCISCO
;      STATE: CALIFORNIA
;      COUNTRY: USA
;      ZIP: 94104
;      COMPUTER READABLE FORM:
;      MEDIUM TYPE: Floppy disk
;      COMPUTER: IBM PC compatible

```

```

;      OPERATING SYSTEM: PC-DOS/MS-DOS
;      SOFTWARE: PatentIn Release #1.0, Version #1.30
;      CURRENT APPLICATION DATA:
;      APPLICATION NUMBER: US/09/306,902A
;      FILING DATE: 07-May-1999
;      CLASSIFICATION: <Unknown>
;      ATTORNEY/AGENT INFORMATION:
;      NAME: OSMAN, RICHARD A
;      REGISTRATION NUMBER: 36,627
;      REFERENCE/DOCKET NUMBER: UC96-217
;      TELECOMMUNICATION INFORMATION:
;      TELEPHONE: (415) 343-4341
;      TELEFAX: (415) 343-4342
;      INFORMATION FOR SEQ ID NO: 5:
;      SEQUENCE CHARACTERISTICS:
;      LENGTH: 898 amino acids
;      TYPE: amino acid
;      STRANDEDNESS: not relevant
;      TOPOLOGY: not relevant
;      MOLECULE TYPE: peptide
;      SEQUENCE DESCRIPTION: SEQ ID NO: 5:
US-09-306-902A-5

```

```

Query Match          100.0%; Score 290; DB 3; Length 898;
Best Local Similarity 100.0%; Pred. No. 3.6e-25;
Matches   50; Conservative   0; Mismatches   0; Indels   0; Gaps   0;

```

```

Qy      1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50
        ||||||||||||||||||||||||||||||||||||||||||||||||
Db      246 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 295

```

# RESULT 3

```

US-09-949-016-10665
; Sequence 10665, Application US/09949016
; Patent No. 6812339
; GENERAL INFORMATION:
; APPLICANT: VENTER, J. Craig et al.
; TITLE OF INVENTION: POLYMORPHISMS IN KNOWN GENES ASSOCIATED
; TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES
THEREOF
; FILE REFERENCE: CL001307
; CURRENT APPLICATION NUMBER: US/09/949,016
; CURRENT FILING DATE: 2000-04-14
; PRIOR APPLICATION NUMBER: 60/241,755
; PRIOR FILING DATE: 2000-10-20
; PRIOR APPLICATION NUMBER: 60/237,768
; PRIOR FILING DATE: 2000-10-03
; PRIOR APPLICATION NUMBER: 60/231,498
; PRIOR FILING DATE: 2000-09-08
; NUMBER OF SEQ ID NOS: 207012
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 10665
; LENGTH: 769
; TYPE: PRT
; ORGANISM: Human
US-09-949-016-10665

```

Query Match 85.9%; Score 249; DB 4; Length 769;  
Best Local Similarity 82.0%; Pred. No. 1.5e-20;  
Matches 41; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50  
|||||||:::||||:||||:|:|||||||:|||| || |||  
Db 102 STWTEWSVCNSRCGRGYQKRTRCTNPAPLNGGAFCEGQSVQKIACTTLC 151

RESULT 4

US-08-808-982-7

; Sequence 7, Application US/08808982  
; Patent No. 5939271  
; GENERAL INFORMATION:  
; APPLICANT: Tessier-Lavigne, Marc  
; APPLICANT: Leonardo, E. David  
; APPLICANT: Hink, Lindsay  
; APPLICANT: Masu, Masayuki  
; APPLICANT: Kazuko, Keino-Masu  
; TITLE OF INVENTION: Netrin Receptors  
; NUMBER OF SEQUENCES: 8  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: SCIENCE & TECHNOLOGY LAW GROUP  
; STREET: 268 BUSH STREET, SUITE 3200  
; CITY: SAN FRANCISCO  
; STATE: CALIFORNIA  
; COUNTRY: USA  
; ZIP: 94104  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: PatentIn Release #1.0, Version #1.30  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/808,982  
; FILING DATE:  
; CLASSIFICATION: 530  
; ATTORNEY/AGENT INFORMATION:  
; NAME: OSMAN, RICHARD A  
; REGISTRATION NUMBER: 36,627  
; REFERENCE/DOCKET NUMBER: UC96-217  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: (415) 343-4341  
; TELEFAX: (415) 343-4342  
; INFORMATION FOR SEQ ID NO: 7:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 943 amino acids  
; TYPE: amino acid  
; STRANDEDNESS: not relevant  
; TOPOLOGY: not relevant  
; MOLECULE TYPE: peptide  
US-08-808-982-7

Query Match 82.1%; Score 238; DB 2; Length 943;  
Best Local Similarity 78.0%; Pred. No. 3.4e-19;  
Matches 39; Conservative 4; Mismatches 7; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50  
 |:| ||| || |||||:|:||||| |||| |:|  
 Db 248 SSWAEWSPCSNRCGRGWQKRTCTNPAPLNGGAFCEGQACQKTACTTVC 297

RESULT 5

US-09-306-902A-7

; Sequence 7, Application US/09306902A  
 ; Patent No. 6277585  
 ; GENERAL INFORMATION:  
 ; APPLICANT: Tessier-Lavigne, Marc  
 ; Leonardo, E. David  
 ; Hink, Lindsay  
 ; Masu, Masayuki  
 ; Kazuko, Keino-Masu  
 ; TITLE OF INVENTION: Netrin Receptors  
 ; NUMBER OF SEQUENCES: 9  
 ; CORRESPONDENCE ADDRESS:  
 ; ADDRESSEE: SCIENCE & TECHNOLOGY LAW GROUP  
 ; STREET: 268 BUSH STREET, SUITE 3200  
 ; CITY: SAN FRANCISCO  
 ; STATE: CALIFORNIA  
 ; COUNTRY: USA  
 ; ZIP: 94104  
 ; COMPUTER READABLE FORM:  
 ; MEDIUM TYPE: Floppy disk  
 ; COMPUTER: IBM PC compatible  
 ; OPERATING SYSTEM: PC-DOS/MS-DOS  
 ; SOFTWARE: PatentIn Release #1.0, Version #1.30  
 ; CURRENT APPLICATION DATA:  
 ; APPLICATION NUMBER: US/09/306,902A  
 ; FILING DATE: 07-May-1999  
 ; CLASSIFICATION: <Unknown>  
 ; ATTORNEY/AGENT INFORMATION:  
 ; NAME: OSMAN, RICHARD A  
 ; REGISTRATION NUMBER: 36,627  
 ; REFERENCE/DOCKET NUMBER: UC96-217  
 ; TELECOMMUNICATION INFORMATION:  
 ; TELEPHONE: (415) 343-4341  
 ; TELEFAX: (415) 343-4342  
 ; INFORMATION FOR SEQ ID NO: 7:  
 ; SEQUENCE CHARACTERISTICS:  
 ; LENGTH: 943 amino acids  
 ; TYPE: amino acid  
 ; STRANDEDNESS: not relevant  
 ; TOPOLOGY: not relevant  
 ; MOLECULE TYPE: peptide  
 ; SEQUENCE DESCRIPTION: SEQ ID NO: 7:

US-09-306-902A-7

Query Match 82.1%; Score 238; DB 3; Length 943;  
 Best Local Similarity 78.0%; Pred. No. 3.4e-19;  
 Matches 39; Conservative 4; Mismatches 7; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50  
 |:| ||| || |||||:|:||||| |||| |:|



RESULT 6

US-09-854-845-16

```
; Sequence 16, Application US/09854845
; Patent No. 6750054
; GENERAL INFORMATION:
; APPLICANT: Walke, D. Wade
; APPLICANT: Wang, Xiaoming
; APPLICANT: Scoville, John
; APPLICANT: Turner, C. Alexander Jr.
; TITLE OF INVENTION: No. 6750054el Human Semaphorin Homologs and
Polynucleotides Encoding the Same
; FILE REFERENCE: LEX-0177-USA
; CURRENT APPLICATION NUMBER: US/09/854,845
; CURRENT FILING DATE: 2001-05-14
; PRIOR APPLICATION NUMBER: US 60/205,274
; PRIOR FILING DATE: 2000-05-18
; PRIOR APPLICATION NUMBER: US 60/208,893
; PRIOR FILING DATE: 2000-06-02
; NUMBER OF SEQ ID NOS: 50
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 16
; LENGTH: 939
; TYPE: PRT
; ORGANISM: homo sapiens
US-09-854-845-16
```

```
Query Match          50.7%; Score 147; DB 4; Length 939;
Best Local Similarity 54.2%; Pred. No. 9.1e-09;
Matches 26; Conservative 6; Mismatches 16; Indels 0; Gaps 0;
```

```
Qy      1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACAT 48
      | || || ||||| | :|:||||:||| | | | : :: |||
Db      717 SCWTSWSPCSASCGGGHYQRTSRCTSPAPSPGEDICLGLHTEALCAT 764
```

RESULT 7

US-09-854-845-14

```
; Sequence 14, Application US/09854845
; Patent No. 6750054
; GENERAL INFORMATION:
; APPLICANT: Walke, D. Wade
; APPLICANT: Wang, Xiaoming
; APPLICANT: Scoville, John
; APPLICANT: Turner, C. Alexander Jr.
; TITLE OF INVENTION: No. 6750054el Human Semaphorin Homologs and
Polynucleotides Encoding the Same
; FILE REFERENCE: LEX-0177-USA
; CURRENT APPLICATION NUMBER: US/09/854,845
; CURRENT FILING DATE: 2001-05-14
; PRIOR APPLICATION NUMBER: US 60/205,274
; PRIOR FILING DATE: 2000-05-18
; PRIOR APPLICATION NUMBER: US 60/208,893
; PRIOR FILING DATE: 2000-06-02
; NUMBER OF SEQ ID NOS: 50
```

; SOFTWARE: FastSEQ for Windows Version 4.0  
; SEQ ID NO 14  
; LENGTH: 954  
; TYPE: PRT  
; ORGANISM: homo sapiens  
US-09-854-845-14

Query Match 50.7%; Score 147; DB 4; Length 954;  
Best Local Similarity 54.2%; Pred. No. 9.2e-09;  
Matches 26; Conservative 6; Mismatches 16; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRCTNPAPLNGGAFCEGQNVQKTACAT 48  
| ||| || ||||| | :||:||||:| | | : : |||  
Db 717 SCWTSWSPCSASCGGGHYQRTSRCTSPAPSPGEDICLGLHTEEALCAT 764

RESULT 8

US-09-854-845-6

; Sequence 6, Application US/09854845  
; Patent No. 6750054  
; GENERAL INFORMATION:  
; APPLICANT: Walke, D. Wade  
; APPLICANT: Wang, Xiaoming  
; APPLICANT: Scoville, John  
; APPLICANT: Turner, C. Alexander Jr.  
; TITLE OF INVENTION: No. 6750054el Human Semaphorin Homologs and  
Polynucleotides Encoding the Same  
; FILE REFERENCE: LEX-0177-USA  
; CURRENT APPLICATION NUMBER: US/09/854,845  
; CURRENT FILING DATE: 2001-05-14  
; PRIOR APPLICATION NUMBER: US 60/205,274  
; PRIOR FILING DATE: 2000-05-18  
; PRIOR APPLICATION NUMBER: US 60/208,893  
; PRIOR FILING DATE: 2000-06-02  
; NUMBER OF SEQ ID NOS: 50  
; SOFTWARE: FastSEQ for Windows Version 4.0  
; SEQ ID NO 6  
; LENGTH: 1034  
; TYPE: PRT  
; ORGANISM: homo sapiens  
US-09-854-845-6

Query Match 50.7%; Score 147; DB 4; Length 1034;  
Best Local Similarity 54.2%; Pred. No. 1e-08;  
Matches 26; Conservative 6; Mismatches 16; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRCTNPAPLNGGAFCEGQNVQKTACAT 48  
| ||| || ||||| | :||:||||:| | | : : |||  
Db 812 SCWTSWSPCSASCGGGHYQRTSRCTSPAPSPGEDICLGLHTEEALCAT 859

RESULT 9

US-09-854-845-2

; Sequence 2, Application US/09854845  
; Patent No. 6750054  
; GENERAL INFORMATION:  
; APPLICANT: Walke, D. Wade

; APPLICANT: Wang, Xiaoming  
 ; APPLICANT: Scoville, John  
 ; APPLICANT: Turner, C. Alexander Jr.  
 ; TITLE OF INVENTION: No. 6750054el Human Semaphorin Homologs and  
 Polynucleotides Encoding the Same  
 ; FILE REFERENCE: LEX-0177-USA  
 ; CURRENT APPLICATION NUMBER: US/09/854,845  
 ; CURRENT FILING DATE: 2001-05-14  
 ; PRIOR APPLICATION NUMBER: US 60/205,274  
 ; PRIOR FILING DATE: 2000-05-18  
 ; PRIOR APPLICATION NUMBER: US 60/208,893  
 ; PRIOR FILING DATE: 2000-06-02  
 ; NUMBER OF SEQ ID NOS: 50  
 ; SOFTWARE: FastSEQ for Windows Version 4.0  
 ; SEQ ID NO 2  
 ; LENGTH: 1049  
 ; TYPE: PRT  
 ; ORGANISM: homo sapiens  
 US-09-854-845-2

Query Match 50.7%; Score 147; DB 4; Length 1049;  
 Best Local Similarity 54.2%; Pred. No. 1e-08;  
 Matches 26; Conservative 6; Mismatches 16; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSCNTPAPLNGGAFCEGQNVQKTACAT 48  
 | || || ||||| | :|:||||:| | | | : :: |||  
 Db 812 SCWTSWSPCSASCGGGHYQRTSRCTSPAPSPGEDICLGLHTEEALCAT 859

# RESULT 10

US-09-854-845-8  
 ; Sequence 8, Application US/09854845  
 ; Patent No. 6750054  
 ; GENERAL INFORMATION:  
 ; APPLICANT: Walke, D. Wade  
 ; APPLICANT: Wang, Xiaoming  
 ; APPLICANT: Scoville, John  
 ; APPLICANT: Turner, C. Alexander Jr.  
 ; TITLE OF INVENTION: No. 6750054el Human Semaphorin Homologs and  
 Polynucleotides Encoding the Same  
 ; FILE REFERENCE: LEX-0177-USA  
 ; CURRENT APPLICATION NUMBER: US/09/854,845  
 ; CURRENT FILING DATE: 2001-05-14  
 ; PRIOR APPLICATION NUMBER: US 60/205,274  
 ; PRIOR FILING DATE: 2000-05-18  
 ; PRIOR APPLICATION NUMBER: US 60/208,893  
 ; PRIOR FILING DATE: 2000-06-02  
 ; NUMBER OF SEQ ID NOS: 50  
 ; SOFTWARE: FastSEQ for Windows Version 4.0  
 ; SEQ ID NO 8  
 ; LENGTH: 1078  
 ; TYPE: PRT  
 ; ORGANISM: homo sapiens  
 US-09-854-845-8

Query Match 50.7%; Score 147; DB 4; Length 1078;  
 Best Local Similarity 54.2%; Pred. No. 1e-08;

Matches 26; Conservative 6; Mismatches 16; Indels 0; Gaps 0;

```
Qy      1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACAT 48
        | | | | | | | | | | : | : | : | | | | | | | : : | |
Db      856 SCWTSWSPCSASCGGGHYQRTSRCTSPAPSPGEDICLGLHTEELCAT 903
```

RESULT 11

US-09-854-845-4

; Sequence 4, Application US/09854845  
; Patent No. 6750054  
; GENERAL INFORMATION:  
; APPLICANT: Walke, D. Wade  
; APPLICANT: Wang, Xiaoming  
; APPLICANT: Scoville, John  
; APPLICANT: Turner, C. Alexander Jr.  
; TITLE OF INVENTION: No. 6750054el Human Semaphorin Homologs and Polynucleotides Encoding the Same  
; FILE REFERENCE: LEX-0177-USA  
; CURRENT APPLICATION NUMBER: US/09/854,845.  
; CURRENT FILING DATE: 2001-05-14  
; PRIOR APPLICATION NUMBER: US 60/205,274  
; PRIOR FILING DATE: 2000-05-18  
; PRIOR APPLICATION NUMBER: US 60/208,893  
; PRIOR FILING DATE: 2000-06-02  
; NUMBER OF SEQ ID NOS: 50  
; SOFTWARE: FastSEQ for Windows Version 4.0  
; SEQ ID NO 4  
; LENGTH: 1093  
; TYPE: PRT  
; ORGANISM: homo sapiens  
US-09-854-845-4

Query Match 50.7%; Score 147; DB 4; Length 1093;

Best Local Similarity 54.2%; Pred. No. 1.1e-08;

Matches 26; Conservative 6; Mismatches 16; Indels 0; Gaps 0;

```
Qy      1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACAT 48
        | | | | | | | | | | : | : | : | | | | | | | : : | |
Db      856 SCWTSWSPCSASCGGGHYQRTSRCTSPAPSPGEDICLGLHTEELCAT 903
```

RESULT 12

US-09-854-845-12

; Sequence 12, Application US/09854845  
; Patent No. 6750054  
; GENERAL INFORMATION:  
; APPLICANT: Walke, D. Wade  
; APPLICANT: Wang, Xiaoming  
; APPLICANT: Scoville, John  
; APPLICANT: Turner, C. Alexander Jr.  
; TITLE OF INVENTION: No. 6750054el Human Semaphorin Homologs and Polynucleotides Encoding the Same  
; FILE REFERENCE: LEX-0177-USA  
; CURRENT APPLICATION NUMBER: US/09/854,845  
; CURRENT FILING DATE: 2001-05-14  
; PRIOR APPLICATION NUMBER: US 60/205,274

; PRIOR FILING DATE: 2000-05-18  
; PRIOR APPLICATION NUMBER: US 60/208,893  
; PRIOR FILING DATE: 2000-06-02  
; NUMBER OF SEQ ID NOS: 50  
; SOFTWARE: FastSEQ for Windows Version 4.0  
; SEQ ID NO 12  
; LENGTH: 1136  
; TYPE: PRT  
; ORGANISM: homo sapiens  
US-09-854-845-12

Query Match 50.7%; Score 147; DB 4; Length 1136;  
Best Local Similarity 54.2%; Pred. No. 1.1e-08;  
Matches 26; Conservative 6; Mismatches 16; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACAT 48  
| || || ||||| | :|:||||:| | | : :: |||  
Db 914 SCWTSWSPCSASCAGGGHYQRTSRCTSPAPSPGEDICLGLHTEELCAT 961

RESULT 13

US-09-854-845-10  
; Sequence 10, Application US/09854845  
; Patent No. 6750054  
; GENERAL INFORMATION:  
; APPLICANT: Walke, D. Wade  
; APPLICANT: Wang, Xiaoming  
; APPLICANT: Scoville, John  
; APPLICANT: Turner, C. Alexander Jr.  
; TITLE OF INVENTION: No. 6750054el Human Semaphorin Homologs and  
Polynucleotides Encoding the Same  
; FILE REFERENCE: LEX-0177-USA  
; CURRENT APPLICATION NUMBER: US/09/854,845  
; CURRENT FILING DATE: 2001-05-14  
; PRIOR APPLICATION NUMBER: US 60/205,274  
; PRIOR FILING DATE: 2000-05-18  
; PRIOR APPLICATION NUMBER: US 60/208,893  
; PRIOR FILING DATE: 2000-06-02  
; NUMBER OF SEQ ID NOS: 50  
; SOFTWARE: FastSEQ for Windows Version 4.0  
; SEQ ID NO 10  
; LENGTH: 1151  
; TYPE: PRT  
; ORGANISM: homo sapiens  
US-09-854-845-10

Query Match 50.7%; Score 147; DB 4; Length 1151;  
Best Local Similarity 54.2%; Pred. No. 1.1e-08;  
Matches 26; Conservative 6; Mismatches 16; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACAT 48  
| || || ||||| | :|:||||:| | | : :: |||  
Db 914 SCWTSWSPCSASCAGGGHYQRTSRCTSPAPSPGEDICLGLHTEELCAT 961

RESULT 14

US-09-930-872-4

```
; Sequence 4, Application US/09930872
; Patent No. 6448388
; GENERAL INFORMATION:
; APPLICANT: Friddle, Carl Johan
; APPLICANT: Hilbun, Erin
; TITLE OF INVENTION: No. 6448388e1 Human Proteases and Polynucleotides
Encoding the Same
; FILE REFERENCE: LEX-0219-USA
; CURRENT APPLICATION NUMBER: US/09/930,872
; CURRENT FILING DATE: 2001-08-14
; PRIOR APPLICATION NUMBER: US 60/225,852
; PRIOR FILING DATE: 2000-08-16
; NUMBER OF SEQ ID NOS: 5
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 4
; LENGTH: 1224
; TYPE: PRT
; ORGANISM: homo sapiens
US-09-930-872-4
```

```
Query Match          47.9%; Score 139; DB 4; Length 1224;
Best Local Similarity 52.0%; Pred. No. 9.8e-08;
Matches 26; Conservative 3; Mismatches 17; Indels 4; Gaps 1;
```

```
Qy      1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50
      | |: || || :|| |   ||| |||| | :|| |||| |   ||
Db      590 SDWSSWSPCSRTCAGGVSHRSRLCTNPKPSHGGKFCEG-----STRTLKLC 635
```

```
RESULT 15
US-10-217-774-4
; Sequence 4, Application US/10217774
; Patent No. 6734007
; GENERAL INFORMATION:
; APPLICANT: Friddle, Carl Johan
; APPLICANT: Hilbun, Erin
; TITLE OF INVENTION: No. 6734007e1 Human Proteases and Polynucleotides
Encoding the
; TITLE OF INVENTION: Same
; FILE REFERENCE: LEX-0219-USA
; CURRENT APPLICATION NUMBER: US/10/217,774
; CURRENT FILING DATE: 2002-08-12
; PRIOR APPLICATION NUMBER: US/09/930,872
; PRIOR FILING DATE: 2001-08-14
; PRIOR APPLICATION NUMBER: US 60/225,852
; PRIOR FILING DATE: 2000-08-16
; NUMBER OF SEQ ID NOS: 5
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 4
; LENGTH: 1224
; TYPE: PRT
; ORGANISM: homo sapiens
US-10-217-774-4
```

```
Query Match          47.9%; Score 139; DB 4; Length 1224;
Best Local Similarity 52.0%; Pred. No. 9.8e-08;
Matches 26; Conservative 3; Mismatches 17; Indels 4; Gaps 1;
```

Qy 1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACATLC 50  
| |: || || :|| | ||| |||| | :|| |||| | ||  
Db 590 SDWSSWSPCSRTC GGGVSHRSRLCTNPKPSHGGKFCEG----STRTLKLC 635

Search completed: March 1, 2005, 09:05:52  
Job time : 3.99591 secs

OM protein - protein search, using sw model

Run on: March 1, 2005, 08:46:18 ; Search time 1.95188 Seconds  
(without alignments)  
2464.715 Million cell updates/sec

Title: US-10-624-932-2\_COPY\_246\_295  
Perfect score: 290  
Sequence: 1 STWTEWSVCSASCGRGWQKR.....NGGAFCEGQNVQKTACATLC 50

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : PIR\_79:\*  
1: pir1:\*  
2: pir2:\*  
3: pir3:\*  
4: pir4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query		DB	ID	Description
		Match	Length			
1	148	51.0	1074	2	JC5928	semaphorin F precu
2	138	47.6	584	1	C8HUA	complement C8 alph
3	132	45.5	837	2	T00355	hypothetical prote
4	130.5	45.0	1444	2	T18856	angiogenesis inhib
5	130	44.8	550	2	T47158	hypothetical prote
6	130	44.8	951	2	T00017	gene ADAMTS-1 prot
7	128	44.1	1170	1	TSHUP1	thrombospondin 1 p
8	127	43.8	919	2	T32541	unc-5 protein - Ca
9	127	43.8	947	1	B44294	unc-5 protein, lon
10	126	43.4	1170	2	A40558	thrombospondin 1 p
11	126	43.4	2165	2	T21371	hypothetical prote
12	123	42.4	585	2	I46686	complement compone
13	119	41.0	1572	2	T00027	brain-specific ang



14	119	41.0	1584	2	T00026	brain-specific ang
15	118.5	40.9	437	2	S05478	properdin - mouse
16	118	40.7	254	2	T15952	hypothetical prote
17	117	40.3	654	2	T29247	hypothetical prote
18	116.5	40.2	984	2	T00326	hypothetical prote
19	116.5	40.2	1522	2	T00028	brain-specific ang
20	115	39.7	1178	1	A39804	thrombospondin pre
21	113.5	39.1	469	1	S29126	properdin precurs
22	111.5	38.4	934	1	A34372	complement C6 prec
23	110	37.9	1172	1	TSHUP2	thrombospondin 2 p
24	109.5	37.8	957	2	T15976	hypothetical prote
25	109	37.6	1172	2	A42587	thrombospondin 2 p
26	108	37.2	788	2	T25061	hypothetical prote
27	106	36.6	590	2	I46687	complement compone
28	106	36.6	843	1	A27340	complement C7 prec
29	104	35.9	1205	2	T18517	procollagen N-endo
30	99.5	34.3	805	2	T34212	hypothetical prote
31	96	33.1	860	2	T16892	hypothetical prote
32	94	32.4	591	1	C8HUB	complement C8 beta
33	92	31.7	2761	2	T21064	hypothetical prote
34	91	31.4	206	2	A45517	coccidiosis-relate
35	91	31.4	712	2	A45638	immunodominant mic
36	91	31.4	736	2	T19366	hypothetical prote
37	90	31.0	807	2	A38152	F-spondin - rat
38	89	30.7	803	2	A47723	F-spondin precurs
39	89	30.7	1360	2	T33922	hypothetical prote
40	86.5	29.8	610	2	T16761	hypothetical prote
41	86.5	29.8	1184	2	T09484	cartilage intermed
42	84	29.0	898	2	T14764	hypothetical prote
43	84	29.0	1059	2	T22545	hypothetical prote
44	80	27.6	651	2	T19477	hypothetical prote
45	79	27.2	724	2	A48569	antigen Em100 - Ei

#### ALIGNMENTS

##### RESULT 1

JC5928

semaphorin F precursor - human

C;Species: Homo sapiens (man)

C;Date: 10-Apr-1998 #sequence\_revision 08-May-1998 #text\_change 09-Jul-2004

C;Accession: JC5928

R;Simmons, A.D.; Pueschel, A.W.; McPherson, J.D.; Overhauser, J.; Lovett, M. Biochem. Biophys. Res. Commun. 242, 685-691, 1998

A;Title: Molecular cloning and mapping of human semaphorin F from the Cri-du-chat candidate interval.

A;Reference number: JC5928; MUID:98125554; PMID:9464278

A;Accession: JC5928

A;Status: nucleic acid sequence not shown

A;Molecule type: mRNA

A;Residues: 1-1074 <SIM>

A;Cross-references: UNIPROT:Q13591; GB:U52840; NID:g2772583; PIDN:AAC09473.1; PID:g2772584

A;Experimental source: brain

C;Comment: This protein disrupts normal brain development and leads to some of the features of Cri-du-chat.

C;Genetics:

A;Gene: sema4

C;Superfamily: human semaphorin F; thrombospondin type 1 repeat homology

F;1-20/Domain: signal sequence #status predicted <SIG>

F;50-533/Domain: semaphorin #status predicted <SEM>

F;840-896/Domain: thrombospondin type 1 repeat homology <THR3>

F;971-993/Domain: transmembrane #status predicted <TMM>

Query Match 51.0%; Score 148; DB 2; Length 1074;

Best Local Similarity 54.5%; Pred. No. 6.6e-09;

Matches 24; Conservative 6; Mismatches 14; Indels 0; Gaps 0;

Qy 3 WTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTAC 46

|| || || :|| |:| | |||:|| | :|| | ||| :: |

Db 601 WTSWSPCSTTCGIGFQVRQRSCSNPTPRHGGRVCVGVQNRREERYC 644

## RESULT 2

C8HUA

complement C8 alpha chain precursor [validated] - human

C;Species: Homo sapiens (man)

C;Date: 28-Dec-1987 #sequence\_revision 17-Nov-2000 #text\_change 17-Nov-2000

C;Accession: I37213; A26704

R;Michelotti, G.A.; Snider, J.V.; Sodetz, J.M.

Hum. Genet. 95, 513-518, 1995

A;Title: Genomic organization of human complement protein C8 alpha and further examination of its linkage to C8 beta.

A;Reference number: I37213; MUID:95278905; PMID:7759071

A;Accession: I37213

A;Status: preliminary; translated from GB/EMBL/DDBJ

A;Molecule type: DNA

A;Residues: 1-584 <MIC>

A;Cross-references: EMBL:U08006; NID:g901862; PIDN:AAA82124.1; PID:g901864

R;Rao, A.G.; Howard, O.M.Z.; Ng, S.C.; Whitehead, A.S.; Colten, H.R.; Sodetz, J.M.

Biochemistry 26, 3556-3564, 1987

A;Title: Complementary DNA and derived amino acid sequence of the alpha subunit of human complement protein C8: evidence for the existence of a separate alpha subunit messenger RNA.

A;Reference number: A26704; MUID:88000560; PMID:2820471

A;Accession: A26704

A;Molecule type: mRNA

A;Residues: 1-92,'Q',94-466,'CCGTQAWASGGQ',480-574,'P',576-584 <RAO>

A;Note: part of the sequence was confirmed by protein sequencing

R;Hofsteenge, J.; Blommers, M.; Hess, D.; Furmanek, A.; Miroshnichenko, O. J. Biol. Chem. 274, 32786-32794, 1999

A;Title: The four terminal components of the complement system are C-mannosylated on multiple tryptophan residues.

A;Reference number: A59362; MUID:20020247; PMID:10551839

A;Contents: annotation

A;Note: identification and location of C-mannosylation sites by mass-spectroscopy

C;Genetics:

A;Gene: GDB:C8A

A;Cross-references: GDB:119735; OMIM:120950

A;Map position: 1p32-1p32

A;Introns: 26/2; 57/3; 106/1; 155/2; 218/3; 285/3; 366/1; 408/1; 460/3; 535/1

C;Complex: heterotrimer of C8 alpha chain (PIR:C8HUA), C8 beta chain (PIR:C8HUB), and C8 gamma chain (PIR:C8HUG); the trimer associates with the C5b-7 complex

C;Function:

A;Description: combines with complement C5b-7 complex to polymerize complement component C9

A;Pathway: complement pathway

C;Superfamily: complement C9; EGF homology; LDL receptor ligand-binding repeat homology; thrombospondin type 1 repeat homology

C;Keywords: complement pathway; cytolysis; glycoprotein; membrane attack complex; plasma

F;1-20/Domain: signal sequence #status predicted <SIG>

F;21-30/Domain: propeptide #status predicted <PRO>

F;31-584/Product: complement C8 alpha chain #status predicted <MPT>

F;37-91/Domain: thrombospondin type 1 repeat homology <THR1>

F;96-130/Domain: LDL receptor ligand-binding repeat homology <LDL>

F;497-528/Domain: EGF homology <EGF>

F;538-584/Domain: thrombospondin type 1 repeat homology <THR2>

F;43/Binding site: carbohydrate (Asn) (covalent) #status absent

F;44,542,545,548/Modified site: 2'-mannosyl-tryptophan (Trp) #status experimental

F;437/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 47.6%; Score 138; DB 1; Length 584;  
Best Local Similarity 56.5%; Pred. No. 5.3e-08;  
Matches 26; Conservative 3; Mismatches 13; Indels 4; Gaps 1;

Qy 1 STWTEWSVCSASCGRGWQKRSRSC TNPAPLNGGAFCEGQNVQKTAC 46  
| : | | | | | : | | | | | | | | : | | |  
Db 543 SCWSSWSVCRA----GIQERRRECDNPAPQNGGASCSGRKVQTQAC 584

### RESULT 3

T00355

hypothetical protein KIAA0688 - human

C;Species: Homo sapiens (man)

C;Date: 01-Feb-1999 #sequence\_revision 01-Feb-1999 #text\_change 09-Jul-2004

C;Accession: T00355

R;Ishikawa, K.; Nagase, T.; Suyama, M.; Miyajima, N.; Tanaka, A.; Kotani, H.; Nomura, N.; Ohara, O.

DNA Res. 5, 169-176, 1998

A;Title: Prediction of the coding sequences of unidentified human genes. X. The complete sequences of 100 new cDNA clones from brain which can code for large proteins in vitro.

A;Reference number: Z14142; MUID:98403880; PMID:9734811

A;Accession: T00355

A;Status: preliminary; translated from GB/EMBL/DDBJ

A;Molecule type: mRNA

A;Residues: 1-837 <ISH>

A;Cross-references: UNIPROT:O75173; EMBL:AB014588; NID:g3327189;

PIDN:BAA31663.1; PID:g3327190

A;Experimental source: brain

C;Genetics:

A;Gene: KIAA0688

F;519-575/Domain: thrombospondin type 1 repeat homology <THR3>

Query Match 45.5%; Score 132; DB 2; Length 837;

Best Local Similarity 47.8%; Pred. No. 3.4e-07;  
Matches 22; Conservative 5; Mismatches 19; Indels 0; Gaps 0;

Qy 3 WTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACAT 48  
| | || :|| | | || || | | ||| :||| : : :| |  
Db 526 WGPWGDCSRTC GGGVQFSSRDCTRPVPRNGGKYCEGRTRFRSCNT 571

#### RESULT 4

T18856

angiogenesis inhibitor homolog - *Caenorhabditis elegans*

C;Species: *Caenorhabditis elegans*

C;Date: 15-Oct-1999 #sequence\_revision 15-Oct-1999 #text\_change 09-Jul-2004

C;Accession: T18856; T24653

R;McMurray, A.

submitted to the EMBL Data Library, July 1995

A;Reference number: Z19031

A;Accession: T18856

A;Status: preliminary; translated from GB/EMBL/DDBJ

A;Molecule type: DNA

A;Residues: 1-1444 <WIL>

A;Cross-references: UNIPROT:Q8MYA8; EMBL:Z50004; PIDN:CAA90293.1; GSPDB:GN00028; CESP:C02B4.1

A;Experimental source: clone C02B4

R;McMurray, A.

submitted to the EMBL Data Library, July 1995

A;Reference number: Z19917

A;Accession: T24653

A;Status: preliminary; translated from GB/EMBL/DDBJ

A;Molecule type: DNA

A;Residues: 1-1444 <WI2>

A;Cross-references: EMBL:Z50006; PIDN:CAA90302.1; GSPDB:GN00028; CESP:C02B4.1

A;Experimental source: clone T07C5

C;Genetics:

A;Gene: CESP:C02B4.1

A;Map position: X

A;Introns: 25/3; 70/3; 96/3; 139/3; 187/1; 234/2; 282/3; 376/2; 422/2; 478/3;  
509/3; 566/2; 625/1; 696/2; 786/3; 812/2; 878/3; 971/1; 1007/3; 1067/1; 1099/3;  
1180/3; 1273/2; 1305/1; 1363/1; 1388/2

Query Match 45.0%; Score 130.5; DB 2; Length 1444;  
Best Local Similarity 52.2%; Pred. No. 7.8e-07;  
Matches 24; Conservative 6; Mismatches 15; Indels 1; Gaps 1;

Qy 1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTAC 46  
|||::|: ||||| | | | |||::| | || | | : |  
Db 1311 STWSDWTPCSASCGFGVQTRDRSCSSPEP-KGGQSCSGLAHQTS LC 1355

#### RESULT 5

T47158

hypothetical protein DKFZp762C1110.1 - human (fragment)

C;Species: *Homo sapiens* (man)

C;Date: 20-Apr-2000 #sequence\_revision 20-Apr-2000 #text\_change 09-Jul-2004

C;Accession: T47158

R;Blum, H.; Bauersachs, S.; Mewes, H.W.; Weil, B.; Wiemann, S.

submitted to the Protein Sequence Database, March 2000

A;Reference number: Z24379  
A;Accession: T47158  
A;Status: preliminary  
A;Molecule type: mRNA  
A;Residues: 1-550 <AAA>  
A;Cross-references: UNIPROT:Q9UHI8; EMBL:AL162080  
A;Experimental source: adult melanoma (MeWo cell line); clone DKFZp762C1110  
C;Genetics:  
A;Note: DKFZp762C1110.1

Query Match 44.8%; Score 130; DB 2; Length 550;  
Best Local Similarity 47.7%; Pred. No. 4e-07;  
Matches 21; Conservative 5; Mismatches 18; Indels 0; Gaps 0;

Qy 3 WTEWSVCSASCGRGWQKRSRSC TNPAPLNGGAFCEGQNVQKTAC 46  
| | || :|| | | | | | | | :||| :| :|  
Db 148 WGPWGDCSRTC GGGVQYTMRECDNFPV PKNGGKYCEGKRVRYRSC 191

#### RESULT 6

T00017

gene ADAMTS-1 protein - mouse

C;Species: Mus musculus (house mouse)

C;Date: 22-Jan-1999 #sequence\_revision 22-Jan-1999 #text\_change 15-Mar-2004

C;Accession: T00017

R;Kuno, K.; Lizasa, H.; Ohno, S.; Matsushima, K.

Genomics 46, 466-471, 1997

A;Title: The exon/intron organization and chromosomal mapping of the mouse ADAMTS-1 gene encoding an ADAM family protein with TSP motifs.

A;Reference number: Z14055; MUID:98110583; PMID:9441751

A;Accession: T00017

A;Status: preliminary; translated from GB/EMBL/DDBJ

A;Molecule type: DNA

A;Residues: 1-951 <KUN>

A;Cross-references: EMBL:AB001735; NID:g2809056; PIDN:BAA24501.1; PID:g2809057

A;Experimental source: strain 129SVJ

C;Genetics:

A;Gene: ADAMTS-1

A;Introns: 228/1; 343/3; 388/1; 444/1; 539/3; 602/1; 660/3; 719/2

F;542-598/Domain: thrombospondin type 1 repeat homology <THR3>

Query Match 44.8%; Score 130; DB 2; Length 951;  
Best Local Similarity 47.7%; Pred. No. 6.3e-07;  
Matches 21; Conservative 5; Mismatches 18; Indels 0; Gaps 0;

Qy 3 WTEWSVCSASCGRGWQKRSRSC TNPAPLNGGAFCEGQNVQKTAC 46  
| | || :|| | | | | | | | :||| :| :|  
Db 549 WGPWGDCSRTC GGGVQYTMRECDNFPV PKNGGKYCEGKRVRYRSC 592

#### RESULT 7

TSHUP1

thrombospondin 1 precursor - human

C;Species: Homo sapiens (man)

C;Date: 23-Aug-1987 #sequence\_revision 03-Aug-1995 #text\_change 09-Jul-2004

C;Accession: A26155; A34274; A30140; A25812; A05172; A42927

R;Lawler, J.; Hynes, R.O.

J. Cell Biol. 103, 1635-1648, 1986

A;Title: The structure of human thrombospondin, an adhesive glycoprotein with multiple calcium-binding sites and homologies with several different proteins.

A;Reference number: A26155; MUID:87057617; PMID:2430973

A;Accession: A26155

A;Molecule type: mRNA

A;Residues: 1-1170 <LAW>

A;Cross-references: UNIPROT:P07996; GB:X04665; NID:g37137; PIDN:CAA28370.1; PID:g37138

A;Note: parts of this sequence, including the amino end of the mature protein, were determined by protein sequencing

R;Laherty, C.D.; Gierman, T.M.; Dixit, V.M.

J. Biol. Chem. 264, 11222-11227, 1989

A;Title: Characterization of the promoter region of the human thrombospondin gene. DNA sequences within the first intron increase transcription.

A;Reference number: A34274; MUID:89291870; PMID:2544587

A;Accession: A34274

A;Molecule type: DNA

A;Residues: 1-166 <LAH>

A;Cross-references: GB:J04835

R;Hennessy, S.W.; Frazier, B.A.; Kim, D.D.; Deckwerth, T.L.; Baumgartel, D.M.; Rotwein, P.; Frazier, W.A.

J. Cell Biol. 108, 729-736, 1989

A;Title: Complete thrombospondin mRNA sequence includes potential regulatory sites in the 3' untranslated region.

A;Reference number: A30140; MUID:89139590; PMID:2918029

A;Accession: A30140

A;Molecule type: mRNA

A;Residues: 1-83,'A',85-522,'A',524-1170 <HEN>

A;Cross-references: EMBL:X14787; NID:g37464; PIDN:CAA32889.1; PID:g37465

A;Note: parts of this sequence, including the amino end of the mature protein, were determined by protein sequencing

R;Kobayashi, S.; Eden-McCutchan, F.; Framson, P.; Bornstein, P.

Biochemistry 25, 8418-8425, 1986

A;Title: Partial amino acid sequence of human thrombospondin as determined by analysis of cDNA clones: homology to malarial circumsporozoite proteins.

A;Reference number: A25812; MUID:87157592; PMID:3030396

A;Accession: A25812

A;Molecule type: mRNA

A;Residues: 1-83,'A',85-397 <KOB>

A;Cross-references: GB:M25631; NID:g538353; PIDN:AAA36741.1; PID:g538354

R;Dixit, V.M.; Hennessy, S.W.; Grant, G.A.; Rotwein, P.; Frazier, W.A.

Proc. Natl. Acad. Sci. U.S.A. 83, 5449-5453, 1986

A;Reference number: A05172; MUID:86287276; PMID:3461443

A;Accession: A05172

A;Molecule type: mRNA

A;Residues: 1-83,'A',85-374,'RC' <DIX>

A;Cross-references: GB:M14326; NID:g340005; PIDN:AAA61237.1; PID:g553801

A;Note: parts of this sequence, including the amino end of the mature protein, were determined by protein sequencing

R;Sun, X.; Skorstengaard, K.; Mosher, D.F.

J. Cell Biol. 118, 693-701, 1992

A;Title: Disulfides modulate RGD-inhibitable cell adhesive activity of thrombospondin.

A;Reference number: A42927; MUID:92348511; PMID:1379247

A;Accession: A42927

A;Molecule type: protein

A;Residues: 987-1003 <SUN>  
 A;Note: Cys-992 is shown to have a free sulfhydryl  
 C;Genetics:  
 A;Gene: GDB:THBS1; TSP1; TSP  
 A;Cross-references: GDB:120438; OMIM:188060  
 A;Map position: 15q15-15q15  
 A;Introns: 23/1  
 A;Note: the list of introns may be incomplete  
 C;Complex: homotrimer, disulfide linked  
 C;Function:  
 A;Description: participates in cell migration and adhesion, and in platelet aggregation  
 C;Superfamily: thrombospondin 1; EGF homology; thrombospondin type 1 repeat homology; von Willebrand factor type C repeat homology  
 C;Keywords: beta-hydroxyasparagine; calcium binding; cell adhesion; glycoprotein; trimer  
 F;1-18/Domain: signal sequence #status predicted <SIG>  
 F;19-1170/Product: thrombospondin 1 #status predicted <MAT>  
 F;317-375/Domain: von Willebrand factor type C repeat homology <VWC>  
 F;378-429/Domain: thrombospondin type 1 repeat homology <THR1>  
 F;434-490/Domain: thrombospondin type 1 repeat homology <THR2>  
 F;491-547/Domain: thrombospondin type 1 repeat homology <THR3>  
 F;551-586/Domain: EGF homology <EGF1>  
 F;650-689/Domain: EGF homology <EGF2>  
 F;926-928/Region: cell attachment (R-G-D) motif  
 F;171-232/Disulfide bonds: #status predicted  
 F;248,360,708,1067/Binding site: carbohydrate (Asn) (covalent) #status predicted  
 F;270,274/Disulfide bonds: interchain #status predicted  
 F;610/Modified site: erythro-beta-hydroxyasparagine (Asn) #status predicted  
 F;1051/Binding site: carbohydrate (Asn) (covalent) #status absent

Query Match 44.1%; Score 128; DB 1; Length 1170;  
 Best Local Similarity 47.7%; Pred. No. 1.2e-06;  
 Matches 21; Conservative 4; Mismatches 19; Indels 0; Gaps 0;

Qy 3 WTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTAC 46  
 | : | : || : || | |||| | || | || : |  
 Db 498 WSPWDICSVTCGGGVQKRSRLCENNPTPQFGGKDCVGDVTENQIC 541

RESULT 8  
 T32541  
 unc-5 protein - *Caenorhabditis elegans*  
 C;Species: *Caenorhabditis elegans*  
 C;Date: 29-Oct-1999 #sequence\_revision 29-Oct-1999 #text\_change 09-Jul-2004  
 C;Accession: T32541  
 R;Latreille, P.  
 submitted to the EMBL Data Library, December 1997  
 A;Description: The sequence of *C. elegans* cosmid B0273.  
 A;Reference number: Z21187  
 A;Accession: T32541  
 A;Status: preliminary; translated from GB/EMBL/DDBJ  
 A;Molecule type: DNA  
 A;Residues: 1-919 <LAT>  
 A;Cross-references: UNIPROT:O44171; EMBL:AF036698; PIDN:AAB88355.1;  
 GSPDB:GN00022; CESP:B0273.4a  
 A;Experimental source: strain Bristol N2; clone B0273

C;Genetics:

A;Gene: unc-5; CESP:B0273.4a

A;Map position: 4

A;Introns: 41/3; 108/1; 142/3; 201/1; 323/2; 553/1; 858/3

C;Superfamily: unc-5 protein; immunoglobulin homology; SH3 homology;  
thrombospondin type 1 repeat homology

Query Match 43.8%; Score 127; DB 2; Length 919;

Best Local Similarity 47.1%; Pred. No. 1.3e-06;

Matches 24; Conservative 9; Mismatches 14; Indels 4; Gaps 2;

Qy 1 STWTEWSVCSASCGRGWQKRSRSCNPAPLNGGAFCEGQNVQKTAC-ATLC 50

|:|:|:| | |:| | | |:|:| | |:| | | | : | | |

Db 278 SSWSDWSACSSSCHR---YRTRACTVPPPMNGGQPCFGDDLMTQECPAQLC 325

RESULT 9

B44294

unc-5 protein, long form - *Caenorhabditis elegans*

N;Contains: unc-5 protein, short form

C;Species: *Caenorhabditis elegans*

C;Date: 30-Apr-1993 #sequence\_revision 28-Jul-1995 #text\_change 09-Jul-2004

C;Accession: B44294; T32540; A44294

R;Leung-Hagesteijn, C.; Spence, A.M.; Stern, B.D.; Zhou, Y.; Su, M.W.;

Hedgecock, E.M.; Culotti, J.G.

Cell 71, 289-299, 1992

A;Title: UNC-5, a transmembrane protein with immunoglobulin and thrombospondin  
type 1 domains, guides cell and pioneer axon migrations in *C. elegans*.

A;Reference number: A44294; MUID:93046629; PMID:1384987

A;Contents: variety Bergerac

A;Accession: B44294

A;Molecule type: DNA

A;Residues: 1-947 <LEU>

A;Cross-references: UNIPROT:O44171; GB:S47168; NID:g258527; PIDN:AAB23867.1;  
PID:g258529

A;Note: sequence extracted from NCBI backbone (NCBIN:116668, NCBIN:116670,  
NCBIN:116672, NCBIN:116674, NCBIN:116676, NCBIN:116678, NCBIN:116680,  
NCBIN:116682, NCBIN:116685, NCBIP:118648)

A;Note: authors translated the codon CTA for residue 642 as Val; sequence shown  
follows the authors' translation

A;Note: mRNA lacking the first exon is equally prevalent

R;Latreille, P.

submitted to the EMBL Data Library, December 1997

A;Description: The sequence of *C. elegans* cosmid B0273.

A;Reference number: Z21187

A;Accession: T32540

A;Status: preliminary; translated from GB/EMBL/DDBJ

A;Molecule type: DNA

A;Residues: 1-947 <LAT>

A;Cross-references: EMBL:AF036698; PIDN:AAB88356.1; GSPDB:GN00022; CESP:B0273.4b

A;Experimental source: strain Bristol N2; clone B0273

C;Genetics:

A;Gene: unc-5

A;Map position: 4

A;Introns: 28/1; 69/3; 136/1; 170/3; 229/1; 351/2; 581/1; 886/3

C;Function:



A;Description: required for guidance of pioneering axons and cells migrating dorsally along the body wall; proposed to be a receptor on the surface of the motile cells  
 C;Superfamily: unc-5 protein; immunoglobulin homology; SH3 homology; thrombospondin type 1 repeat homology  
 C;Keywords: alternative splicing; duplication; glycoprotein; receptor; transmembrane protein  
 F;30-947/Product: unc-5 protein, short form #status predicted <ALT>  
 F;46-116/Domain: immunoglobulin homology <IM1>  
 F;153-211/Domain: immunoglobulin homology <IM2>  
 F;229-300/Domain: thrombospondin type 1 repeat homology #status atypical <THR1>  
 F;301-354/Domain: thrombospondin type 1 repeat homology <THR2>  
 F;365-390/Domain: transmembrane #status predicted <TMM>  
 F;512-559/Domain: SH3 homology <SH3>  
 F;53-114,65-112,160-209/Disulfide bonds: #status predicted  
 F;206/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 43.8%; Score 127; DB 1; Length 947;  
 Best Local Similarity 47.1%; Pred. No. 1.4e-06;  
 Matches 24; Conservative 9; Mismatches 14; Indels 4; Gaps 2;

Qy 1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTAC-ATLC 50  
 |:|::|| ||:| | |:|:| | |:| | | :: | | |  
 Db 306 SSWSDWSACSSSCHR---YRTRACTVPPPMNGGQPCFGDDLMTQECPAQLC 353

# RESULT 10

A40558

thrombospondin 1 precursor - mouse

C;Species: Mus musculus (house mouse)

C;Date: 05-Jun-1992 #sequence\_revision 05-Jun-1992 #text\_change 09-Jul-2004

C;Accession: A40558; A37905; B42587; S68787

R;Lawler, J.; Duquette, M.; Ferro, P.; Copeland, N.G.; Gilbert, D.J.; Jenkins, N.A.

Genomics 11, 587-600, 1991

A;Title: Characterization of the murine thrombospondin gene.

A;Reference number: A40558; MUID:92128941; PMID:1774063

A;Accession: A40558

A;Status: preliminary

A;Molecule type: DNA

A;Residues: 1-1170 <LAW>

A;Cross-references: UNIPROT:P35441; GB:M62449; GB:M62450; GB:M62451; GB:M62452;

GB:M62453; GB:M62454; GB:M62455; GB:M62456; GB:M62457; GB:M62458; GB:M62459;

GB:M62460; GB:M62461; GB:M62462; GB:M62463; GB:M62464; GB:M62465; GB:M62466;

GB:M62467; GB:M62468; GB:M62469; GB:M62470; NID:g511867; PIDN:AAA50611.1;

PID:g511869

R;Bornstein, P.; Alfi, D.; Devarayalu, S.; Framson, P.; Li, P.

J. Biol. Chem. 265, 16691-16698, 1990

A;Title: Characterization of the mouse thrombospondin gene and evaluation of the role of the first intron in human gene expression.

A;Reference number: A37905; MUID:90375546; PMID:2398070

A;Accession: A37905

A;Status: preliminary

A;Molecule type: DNA

A;Residues: 1-490 <BOR>

A;Cross-references: GB:J05605; GB:J05606; NID:g201991; PIDN:AAA40431.1;

PID:g554390



R;Gajadsty, S.  
submitted to the EMBL Data Library, February 1996  
A;Reference number: Z19949  
A;Accession: T24896  
A;Status: preliminary; translated from GB/EMBL/DDBJ  
A;Molecule type: DNA  
A;Residues: 1-2165 <WI2>  
A;Cross-references: EMBL:Z69361; PIDN:CAA93288.1; GSPDB:GN00022; CESP:F25H8.3  
A;Experimental source: clone T13H10  
C;Genetics:  
A;Gene: CESP:F25H8.3  
A;Map position: 4  
A;Introns: 31/1; 52/1; 135/2; 193/3; 216/1; 266/1; 495/2; 547/3; 584/3; 634/2;  
744/1; 814/1; 961/2; 1251/3; 1338/3; 1500/3; 1553/3; 1647/3; 1704/3; 1762/3;  
1820/3; 1938/1; 1998/2; 2044/1; 2109/3

Query Match 43.4%; Score 126; DB 2; Length 2165;  
Best Local Similarity 45.7%; Pred. No. 3.5e-06;  
Matches 21; Conservative 5; Mismatches 20; Indels 0; Gaps 0;

Qy 3 WTEWSVCSASCGRGWQKRSRSCNTPAPLNGGAFCEGQNVQKTACAT 48  
| | || :| | | | :| | || :| | : | |  
Db 609 WRSWGECSRTC GGGVQKGLRDCDSPKPRNGGKYCVGQRERYRSCNT 654

# RESULT 12

I46686

complement component C8 alpha subunit - rabbit

C;Species: Oryctolagus cuniculus (domestic rabbit)

C;Date: 14-Feb-1997 #sequence\_revision 14-Feb-1997 #text\_change 09-Jul-2004

C;Accession: I46686

R;White, R.V.; Kaufman, K.M.; Letson, C.S.; Platteborze, P.L.; Sodetz, J.M.  
J. Immunol. 152, 2501-2508, 1994

A;Title: Characterization of rabbit complement component C8: Functional evidence  
for the species-selective recognition of C8 alpha by homologous restriction  
factor (CD59).

A;Reference number: I46686; MUID:94179833; PMID:7510745

A;Accession: I46686

A;Status: preliminary; translated from GB/EMBL/DDBJ

A;Molecule type: mRNA

A;Residues: 1-585 <WHI>

A;Cross-references: UNIPROT:P98136; GB:L26981; NID:g469060; PIDN:AAA31191.1;  
PID:g469061

C;Superfamily: complement C9; EGF homology; LDL receptor ligand-binding repeat  
homology; thrombospondin type 1 repeat homology

F;37-91/Domain: thrombospondin type 1 repeat homology <THR1>

F;96-130/Domain: LDL receptor ligand-binding repeat homology <LDL2>

F;498-529/Domain: EGF homology <EGF>

Query Match 42.4%; Score 123; DB 2; Length 585;  
Best Local Similarity 52.2%; Pred. No. 2.6e-06;  
Matches 24; Conservative 3; Mismatches 15; Indels 4; Gaps 1;

Qy 1 STWTEWSVCSASCGRGWQKRSRSCNTPAPLNGGAFCEGQNVQKTAC 46  
| | || |:| | :| | | || | | | |  
Db 544 SCWGSWSPCTA----GTRERRRRECNNPAPQNGGAPCPGWRVQTQAC 585

# RESULT 13

T00027

brain-specific angiogenesis inhibitor 2 - human

N;Alternate names: BAI2 protein

C;Species: Homo sapiens (man)

C;Date: 22-Jan-1999 #sequence\_revision 22-Jan-1999 #text\_change 09-Jul-2004

C;Accession: T00027

R;Shiratsuchi, T.; Nishimori, H.; Ichise, H.; Nakamura, Y.; Tokino, T.

Cytogenet. Cell Genet. 79, 103-108, 1997

A;Title: Cloning and characterization of BAI2 and BAI3, novel genes homologous to brain-specific angiogenesis inhibitor 1 (BAI 1).

A;Reference number: Z14066; MUID:98194217; PMID:9533023

A;Accession: T00027

A;Status: translated from GB/EMBL/DDBJ

A;Molecule type: mRNA

A;Residues: 1-1572 <SHI>

A;Cross-references: UNIPROT:O60241; EMBL:AB005298; NID:g3021698;

PIDN:BAA25362.1; PID:g3021699

A;Experimental source: brain

C;Genetics:

A;Gene: GDB:BAI2

A;Cross-references: GDB:9838089; OMIM:602683

A;Map position: 1p35-1p35

Query Match 41.0%; Score 119; DB 2; Length 1572;  
Best Local Similarity 46.7%; Pred. No. 1.6e-05;  
Matches 21; Conservative 6; Mismatches 16; Indels 2; Gaps 1;

Qy 3 WTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACA 47  
| ||:|| ||||| : | |:| | :|| ||| :| |:  
Db 358 WGSWSLCSRSCGRGRSRMRTCV--PPQHGGKACEGPELQTKLCS 400

# RESULT 14

T00026

brain-specific angiogenesis inhibitor 1 - human

N;Alternate names: BAI1 protein

C;Species: Homo sapiens (man)

C;Date: 22-Jan-1999 #sequence\_revision 22-Jan-1999 #text\_change 09-Jul-2004

C;Accession: T00026

R;Nishimori, H.; Shiratsuchi, T.; Urano, T.; Kimura, Y.; Kiyono, K.; Tatsumi,

K.; Yoshida, S.; Ono, M.; Kuwano, M.; Nakamura, Y.

submitted to the EMBL Data Library, June 1997

A;Reference number: Z14064

A;Accession: T00026

A;Status: translated from GB/EMBL/DDBJ

A;Molecule type: mRNA

A;Residues: 1-1584 <NIS>

A;Cross-references: UNIPROT:O14514; EMBL:AB005297; NID:d1175078; PID:d1024528

A;Experimental source: brain

C;Genetics:

A;Gene: GDB:BAI1

A;Cross-references: GDB:9838088; OMIM:602682

A;Map position: 8q24-8q24

F;408-462/Domain: thrombospondin type 1 repeat homology <THR3>

Query Match 41.0%; Score 119; DB 2; Length 1584;  
Best Local Similarity 47.7%; Pred. No. 1.6e-05;  
Matches 21; Conservative 7; Mismatches 14; Indels 2; Gaps 1;

Qy 3 WTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTAC 46  
|: || ||||| :| |:| | |: ||| |:| |: |  
Db 473 WSSWSACSASCSQGRQRTRECNGPS--YGGAECQGHVETRDC 514

RESULT 15

S05478

properdin - mouse (fragment)

C;Species: Mus musculus (house mouse)

C;Date: 07-Sep-1990 #sequence\_revision 07-Sep-1990 #text\_change 09-Jul-2004

C;Accession: S05478

R;Goundis, D.; Reid, K.B.M.

Nature 335, 82-85, 1988

A;Title: Properdin, the terminal complement components, thrombospondin and the circumsporozoite protein of malaria parasites contain similar sequence motifs.

A;Reference number: S05478; MUID:88318954; PMID:3045564

A;Accession: S05478

A;Molecule type: mRNA

A;Residues: 1-437 <GOU>

A;Cross-references: UNIPROT:P11680; EMBL:X12905; NID:g53786; PIDN:CAA31389.1; PID:g53787

C;Complex: a mixture of homodimers, homotrimers and homotetramers

C;Function:

A;Description: protects C3 convertase (C3bBb) from rapid inactivation

A;Pathway: complement alternate pathway

C;Superfamily: human properdin precursor; thrombospondin type 1 repeat homology

C;Keywords: complement alternate pathway; glycoprotein; homodimer; homotetramer; homotrimer; plasma

F;45-97/Domain: thrombospondin type 1 repeat homology <THR1>

F;104-160/Domain: thrombospondin type 1 repeat homology <THR2>

F;161-224/Domain: thrombospondin type 1 repeat homology <THR3>

F;225-282/Domain: thrombospondin type 1 repeat homology <THR4>

F;283-345/Domain: thrombospondin type 1 repeat homology <THR5>

F;346-408/Domain: thrombospondin type 1 repeat homology <THR6>

F;52,55,108,111,114,165,168,229,232,290,293,350,353,356/Modified site: 2'-mannosyl-tryptophan (Trp) #status predicted

F;366,396/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 40.9%; Score 118.5; DB 2; Length 437;  
Best Local Similarity 47.9%; Pred. No. 6.4e-06;  
Matches 23; Conservative 3; Mismatches 21; Indels 1; Gaps 1;

Qy 1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACAT 48  
| | | || |:| :| | | | ||| || | |: | || |  
Db 109 SEWGPWGPCSVTCSKGTQIRQRVCDNPAPKCGG-HCPGEAQQSQACDT 155

Search completed: March 1, 2005, 09:07:20

Job time : 2.95188 secs

GenCore version 5.1.6  
Copyright (c) 1993 - 2005 Compugen Ltd.

OM protein - protein search, using sw model

Run on: March 1, 2005, 09:06:01 ; Search time 9.62324 Seconds  
(without alignments)  
1704.439 Million cell updates/sec

Title: US-10-624-932-2\_COPY\_246\_295  
Perfect score: 290  
Sequence: 1 STWTEWSVCSASCGRGWQKR.....NGGAFCEGQNVQKTACATLC 50

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 1385339 seqs, 328044528 residues

Total number of hits satisfying chosen parameters: 1385339

Minimum DB seq length: 0  
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : Published Applications\_AA:\*

- 1: /cgn2\_6/ptodata/1/pubpaa/US07\_PUBCOMB.pep:\*
- 2: /cgn2\_6/ptodata/1/pubpaa/PCT\_NEW\_PUB.pep:\*
- 3: /cgn2\_6/ptodata/1/pubpaa/US06\_NEW\_PUB.pep:\*
- 4: /cgn2\_6/ptodata/1/pubpaa/US06\_PUBCOMB.pep:\*
- 5: /cgn2\_6/ptodata/1/pubpaa/US07\_NEW\_PUB.pep:\*
- 6: /cgn2\_6/ptodata/1/pubpaa/PCTUS\_PUBCOMB.pep:\*
- 7: /cgn2\_6/ptodata/1/pubpaa/US08\_NEW\_PUB.pep:\*
- 8: /cgn2\_6/ptodata/1/pubpaa/US08\_PUBCOMB.pep:\*
- 9: /cgn2\_6/ptodata/1/pubpaa/US09A\_PUBCOMB.pep:\*
- 10: /cgn2\_6/ptodata/1/pubpaa/US09B\_PUBCOMB.pep:\*
- 11: /cgn2\_6/ptodata/1/pubpaa/US09C\_PUBCOMB.pep:\*
- 12: /cgn2\_6/ptodata/1/pubpaa/US09\_NEW\_PUB.pep:\*
- 13: /cgn2\_6/ptodata/1/pubpaa/US10A\_PUBCOMB.pep:\*
- 14: /cgn2\_6/ptodata/1/pubpaa/US10B\_PUBCOMB.pep:\*
- 15: /cgn2\_6/ptodata/1/pubpaa/US10C\_PUBCOMB.pep:\*
- 16: /cgn2\_6/ptodata/1/pubpaa/US10D\_PUBCOMB.pep:\*
- 17: /cgn2\_6/ptodata/1/pubpaa/US10\_NEW\_PUB.pep:\*
- 18: /cgn2\_6/ptodata/1/pubpaa/US11\_NEW\_PUB.pep:\*
- 19: /cgn2\_6/ptodata/1/pubpaa/US60\_NEW\_PUB.pep:\*
- 20: /cgn2\_6/ptodata/1/pubpaa/US60\_PUBCOMB.pep:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	%		DB	ID	Description
		Query	Match Length			
1	290	100.0	898	10	US-09-933-261-5	Sequence 5, Appli
2	290	100.0	898	10	US-09-918-779-2	Sequence 2, Appli
3	290	100.0	898	10	US-09-970-944-13	Sequence 13, Appl
4	290	100.0	898	14	US-10-256-702-5	Sequence 5, Appli
5	290	100.0	898	14	US-10-240-154-16	Sequence 16, Appl
6	290	100.0	898	15	US-10-624-932-2	Sequence 2, Appli
7	249	85.9	931	10	US-09-970-944-15	Sequence 15, Appl
8	249	85.9	931	10	US-09-970-944-16	Sequence 16, Appl
9	249	85.9	931	10	US-09-970-944-17	Sequence 17, Appl
10	249	85.9	931	11	US-09-972-211-121	Sequence 121, App
11	249	85.9	931	11	US-09-972-211-122	Sequence 122, App
12	249	85.9	931	11	US-09-972-211-125	Sequence 125, App
13	249	85.9	931	15	US-10-087-684-35	Sequence 35, Appl
14	249	85.9	931	15	US-10-087-684-36	Sequence 36, Appl
15	249	85.9	931	15	US-10-218-779-36	Sequence 36, Appl
16	249	85.9	931	15	US-10-037-417-117	Sequence 117, App
17	249	85.9	931	15	US-10-037-417-118	Sequence 118, App
18	249	85.9	931	15	US-10-037-417-119	Sequence 119, App
19	249	85.9	931	15	US-10-037-417-120	Sequence 120, App
20	249	85.9	931	15	US-10-096-625-121	Sequence 121, App
21	249	85.9	931	15	US-10-096-625-122	Sequence 122, App
22	249	85.9	931	15	US-10-096-625-125	Sequence 125, App
23	249	85.9	1010	15	US-10-218-779-35	Sequence 35, Appl
24	243	83.8	899	10	US-09-970-944-2	Sequence 2, Appli
25	239	82.4	56	17	US-10-872-681-32	Sequence 32, Appl
26	239	82.4	679	15	US-10-094-886-118	Sequence 118, App
27	239	82.4	887	17	US-10-872-681-54	Sequence 54, Appl
28	239	82.4	924	16	US-10-473-518-63	Sequence 63, Appl
29	239	82.4	933	15	US-10-087-684-2	Sequence 2, Appli
30	239	82.4	933	15	US-10-087-684-4	Sequence 4, Appli
31	239	82.4	933	15	US-10-218-779-2	Sequence 2, Appli
32	239	82.4	933	15	US-10-218-779-4	Sequence 4, Appli
33	239	82.4	945	14	US-10-028-072-146	Sequence 146, App
34	239	82.4	945	14	US-10-140-808-146	Sequence 146, App
35	239	82.4	945	14	US-10-121-049-146	Sequence 146, App
36	239	82.4	945	14	US-10-123-904-146	Sequence 146, App
37	239	82.4	945	14	US-10-140-470-146	Sequence 146, App
38	239	82.4	945	14	US-10-175-746-146	Sequence 146, App
39	239	82.4	945	14	US-10-176-918-146	Sequence 146, App
40	239	82.4	945	14	US-10-176-921-146	Sequence 146, App
41	239	82.4	945	14	US-10-137-865-146	Sequence 146, App
42	239	82.4	945	14	US-10-140-474-146	Sequence 146, App
43	239	82.4	945	14	US-10-142-431-146	Sequence 146, App
44	239	82.4	945	14	US-10-143-114-146	Sequence 146, App
45	239	82.4	945	14	US-10-142-419-146	Sequence 146, App

#### ALIGNMENTS

#### RESULT 1

US-09-933-261-5

; Sequence 5, Application US/09933261

```

; Publication No. US20030040046A1
;   GENERAL INFORMATION:
;       APPLICANT: Tessier-Lavigne, Marc
;                   Leonardo, E. David
;                   Hink, Lindsay
;                   Masu, Masayuki
;                   Kazuko, Keino-Masu
;   TITLE OF INVENTION: Netrin Receptors
;   NUMBER OF SEQUENCES: 8
;   CORRESPONDENCE ADDRESS:
;       ADDRESSEE: SCIENCE & TECHNOLOGY LAW GROUP
;       STREET: 268 BUSH STREET, SUITE 3200
;       CITY: SAN FRANCISCO
;       STATE: CALIFORNIA
;       COUNTRY: USA
;       ZIP: 94104
;   COMPUTER READABLE FORM:
;       MEDIUM TYPE: Floppy disk
;       COMPUTER: IBM PC compatible
;       OPERATING SYSTEM: PC-DOS/MS-DOS
;       SOFTWARE: PatentIn Release #1.0, Version #1.30
;   CURRENT APPLICATION DATA:
;       APPLICATION NUMBER: US/09/933,261
;       FILING DATE: 20-Aug-2001
;       CLASSIFICATION: <Unknown>
;   PRIOR APPLICATION DATA:
;       APPLICATION NUMBER: 08/808,982
;       FILING DATE: <Unknown>
;   ATTORNEY/AGENT INFORMATION:
;       NAME: OSMAN, RICHARD A
;       REGISTRATION NUMBER: 36,627
;       REFERENCE/DOCKET NUMBER: UC96-217
;   TELECOMMUNICATION INFORMATION:
;       TELEPHONE: (415) 343-4341
;       TELEFAX: (415) 343-4342
;   INFORMATION FOR SEQ ID NO: 5:
;       SEQUENCE CHARACTERISTICS:
;           LENGTH: 898 amino acids
;           TYPE: amino acid
;           STRANDEDNESS: No. US20030040046A1 Relevant
;           TOPOLOGY: No. US20030040046A1 Relevant
;       MOLECULE TYPE: peptide
;       SEQUENCE DESCRIPTION: SEQ ID NO: 5:
US-09-933-261-5

```

```

Query Match          100.0%; Score 290; DB 10; Length 898;
Best Local Similarity 100.0%; Pred. No. 9.9e-24;
Matches    50; Conservative    0; Mismatches    0; Indels    0; Gaps    0;

Qy          1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50
            |||
Db          246 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 295

```

```

RESULT 2
US-09-918-779-2
; Sequence 2, Application US/09918779

```



; Publication No. US20030064369A1  
; GENERAL INFORMATION:  
; APPLICANT: Taupier, Raymond  
; APPLICANT: Padigaru, Muralidhara  
; APPLICANT: Rastelli, Luca  
; APPLICANT: Spaderna, Steven  
; APPLICANT: Shimkets, Richard  
; APPLICANT: Zerhusen, Bryan  
; APPLICANT: Spytek, Kimberly  
; APPLICANT: Shenoy, Suresh  
; APPLICANT: Li, Li  
; APPLICANT: Gusev, Vladimir  
; APPLICANT: Grosse, William  
; APPLICANT: Alsobrook, John  
; APPLICANT: Lepley, Denise  
; APPLICANT: Burgess, Catherine  
; APPLICANT: Gerlach, Valerie  
; APPLICANT: Ellerman, Karen  
; APPLICANT: MacDougall, John  
; APPLICANT: Stone, David  
; APPLICANT: Smithson, Glennnda  
; TITLE OF INVENTION: Novel Proteins and Nucleic Acids Encoding Same  
; FILE REFERENCE: 21402-074 US  
; CURRENT APPLICATION NUMBER: US/09/918,779  
; CURRENT FILING DATE: 2001-07-30  
; PRIOR APPLICATION NUMBER: 60/221,409  
; PRIOR FILING DATE: 2000-07-28  
; PRIOR APPLICATION NUMBER: 60/222,840  
; PRIOR FILING DATE: 2000-08-04  
; PRIOR APPLICATION NUMBER: 60/223,752  
; PRIOR FILING DATE: 2000-08-08  
; PRIOR APPLICATION NUMBER: 60/223,762  
; PRIOR FILING DATE: 2000-08-08  
; PRIOR APPLICATION NUMBER: 60/223,770  
; PRIOR FILING DATE: 2000-08-08  
; PRIOR APPLICATION NUMBER: 60/223,769  
; PRIOR FILING DATE: 2000-08-08  
; PRIOR APPLICATION NUMBER: 60/225,146  
; PRIOR FILING DATE: 2000-08-14  
; PRIOR APPLICATION NUMBER: 60/225,392  
; PRIOR FILING DATE: 2000-08-15  
; PRIOR APPLICATION NUMBER: 60/225,470  
; PRIOR FILING DATE: 2000-08-15  
; PRIOR APPLICATION NUMBER: 60/225,697  
; PRIOR FILING DATE: 2000-08-16  
; PRIOR APPLICATION NUMBER: 60/263,662  
; PRIOR FILING DATE: 2001-02-01  
; PRIOR APPLICATION NUMBER: 60/281,645  
; PRIOR FILING DATE: 2001-04-05  
; NUMBER OF SEQ ID NOS: 61  
; SOFTWARE: PatentIn Ver. 2.1  
; SEQ ID NO 2  
; LENGTH: 898  
; TYPE: PRT  
; ORGANISM: Homo sapiens  
US-09-918-779-2

Query Match 100.0%; Score 290; DB 10; Length 898;  
Best Local Similarity 100.0%; Pred. No. 9.9e-24;  
Matches 50; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSC TNPAPLNGGAFCEGQNVQKTACATLC 50  
|||||  
Db 246 STWTEWSVCSASCGRGWQKRSRSC TNPAPLNGGAFCEGQNVQKTACATLC 295

RESULT 3

US-09-970-944-13

; Sequence 13, Application US/09970944  
; Publication No. US20030204052A1  
; GENERAL INFORMATION:  
; APPLICANT: Herrman, John L  
; APPLICANT: Rastelli, Luca  
; APPLICANT: Shimkets, Richard A  
; TITLE OF INVENTION: No. US20030204052A1e1 Proteins and Nucleic Acids Encoding  
Same and  
; TITLE OF INVENTION: Antibodies Directed Against these Proteins  
; FILE REFERENCE: 21402-138  
; CURRENT APPLICATION NUMBER: US/09/970,944  
; CURRENT FILING DATE: 2002-05-02  
; PRIOR APPLICATION NUMBER: 60/237,862  
; PRIOR FILING DATE: 2000-10-04  
; NUMBER OF SEQ ID NOS: 62  
; SOFTWARE: PatentIn Ver. 2.1  
; SEQ ID NO 13  
; LENGTH: 898  
; TYPE: PRT  
; ORGANISM: Rattus norvegicus  
US-09-970-944-13

Query Match 100.0%; Score 290; DB 10; Length 898;  
Best Local Similarity 100.0%; Pred. No. 9.9e-24;  
Matches 50; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSC TNPAPLNGGAFCEGQNVQKTACATLC 50  
|||||  
Db 246 STWTEWSVCSASCGRGWQKRSRSC TNPAPLNGGAFCEGQNVQKTACATLC 295

RESULT 4

US-10-256-702-5

; Sequence 5, Application US/10256702  
; Publication No. US20030059859A1  
; GENERAL INFORMATION:  
; APPLICANT: Tessier-Lavigne, Marc  
; Leonardo, E. David  
; Hink, Lindsay  
; Masu, Masayuki  
; Kazuko, Keino-Masu  
; TITLE OF INVENTION: Netrin Receptors  
; NUMBER OF SEQUENCES: 8  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: SCIENCE & TECHNOLOGY LAW GROUP  
; STREET: 268 BUSH STREET, SUITE 3200

```

;      CITY: SAN FRANCISCO
;      STATE: CALIFORNIA
;      COUNTRY: USA
;      ZIP: 94104
;      COMPUTER READABLE FORM:
;      MEDIUM TYPE: Floppy disk
;      COMPUTER: IBM PC compatible
;      OPERATING SYSTEM: PC-DOS/MS-DOS
;      SOFTWARE: PatentIn Release #1.0, Version #1.30
;      CURRENT APPLICATION DATA:
;      APPLICATION NUMBER: US/10/256,702
;      FILING DATE: 27-Sep-2002
;      CLASSIFICATION: <Unknown>
;      PRIOR APPLICATION DATA:
;      APPLICATION NUMBER: US/09/933,261
;      FILING DATE: 20-Aug-2001
;      APPLICATION NUMBER: 08/808,982
;      FILING DATE: <Unknown>
;      ATTORNEY/AGENT INFORMATION:
;      NAME: OSMAN, RICHARD A
;      REGISTRATION NUMBER: 36,627
;      REFERENCE/DOCKET NUMBER: UC96-217
;      TELECOMMUNICATION INFORMATION:
;      TELEPHONE: (415) 343-4341
;      TELEFAX: (415) 343-4342
;      INFORMATION FOR SEQ ID NO: 5:
;      SEQUENCE CHARACTERISTICS:
;      LENGTH: 898 amino acids
;      TYPE: amino acid
;      STRANDEDNESS: No. US20030059859A1 Relevant
;      TOPOLOGY: No. US20030059859A1 Relevant
;      MOLECULE TYPE: peptide
;      SEQUENCE DESCRIPTION: SEQ ID NO: 5:
US-10-256-702-5

```

```

Query Match          100.0%; Score 290; DB 14; Length 898;
Best Local Similarity 100.0%; Pred. No. 9.9e-24;
Matches    50; Conservative    0; Mismatches    0; Indels    0; Gaps    0;

```

```

Qy      1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50
        ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      246 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 295

```

```

RESULT 5
US-10-240-154-16
; Sequence 16, Application US/10240154
; Publication No. US20030175741A1
; GENERAL INFORMATION:
; APPLICANT: Cochran et al.
; TITLE OF INVENTION: SCHIZOPHRENIA RELATED GENES
; FILE REFERENCE: CKFW-P01-006
; CURRENT APPLICATION NUMBER: US/10/240,154
; CURRENT FILING DATE: 2001-04-02
; PRIOR APPLICATION NUMBER: PCT/GB01/01486
; PRIOR FILING DATE: 2001-04-02
; NUMBER OF SEQ ID NOS: 34

```

```
; SOFTWARE: PatentIn version 3.2
; SEQ ID NO 16
; LENGTH: 898
; TYPE: PRT
; ORGANISM: Rattus sp.
US-10-240-154-16
```

Query Match 100.0%; Score 290; DB 14; Length 898;  
Best Local Similarity 100.0%; Pred. No. 9.9e-24;  
Matches 50; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACATLC 50  
 |||  
 Db 246 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGONVOKTACATLC 295

RESULT 6

US-10-624-932-2

; Sequence 2, Application US/10624932

; Publication No. US20040096877A1

## ; GENERAL INFORMATION:

; APPLICANT: Taupier, Raymond

; APPLICANT: Padigaru, Muralidhara

; APPLICANT: Rastelli, Luca

; APPLICANT: Spaderna, Steven

; APPLICANT: Shimkets, Richard

; APPLICANT: Zerhusen, Bryan

; APPLICANT: Spytek, Kimberly

; APPLICANT: Shenoy, Suresh

; APPLICANT: Li, Li

; APPLICANT: Gusev, Vladimir

; APPLICANT: Grosse, William

; APPLICANT: Alsobrook, John

; APPLICANT: Lепley, Denise

; APPLICANT: Burgess, Catherine

; APPLICANT: Gerlach, Valerie

; APPLICANT: Ellerman, Karen

; APPLICANT: MacDougall, John

; APPLICANT: Stone, David

; APPLICANT: Smithson, Glenda

; TITLE OF INVENTION: Novel Proteins and Nucleic Acids Encoding Same

; FILE REFERENCE: 21402-074 US

; CURRENT APPLICATION NUMBER: US/10/624,932

; CURRENT FILING DATE: 2003-07-21

; PRIOR APPLICATION NUMBER: 09/918,779

; PRIOR FILING DATE: 2001-07-03

; PRIOR APPLICATION NUMBER: 60/221,409

; PRIOR FILING DATE: 2000-07-28

; PRIOR APPLICATION NUMBER: 60/222,840

; PRIOR FILING DATE: 2000-08-04

; PRIOR APPLICATION NUMBER: 60/223,752

; PRIOR FILING DATE: 2000-08-08

; PRIOR APPLICATION NUMBER: 60/223,762

; PRIOR FILING DATE: 2000-08-08

; PRIOR APPLICATION NUMBER: 60/223,770

; PRIOR FILING DATE: 2000-08-08

; PRIOR APPLICATION NUMBER: 60/223,769

Qy            1 STWTEWSVCSASCGRGWQKRSRSCTNPAPLNGGAFCEGQNVOQTACATLC     50  
             |||||:::|||::|:|||||  
Db          264 STWTEWSVCNSRCGRGYOKRTRTCTNPAPLNGGAFCEGOSVOKIACTTLC   313

RESULT 8

US-09-970-944-16

; Sequence 16, Application US/09970944  
 ; Publication No. US20030204052A1  
 ; GENERAL INFORMATION:  
 ; APPLICANT: Herrman, John L  
 ; APPLICANT: Rastelli, Luca  
 ; APPLICANT: Shimkets, Richard A  
 ; TITLE OF INVENTION: No. US20030204052A1e1 Proteins and Nucleic Acids Encoding Same and  
 ; TITLE OF INVENTION: Antibodies Directed Against these Proteins  
 ; FILE REFERENCE: 21402-138  
 ; CURRENT APPLICATION NUMBER: US/09/970,944  
 ; CURRENT FILING DATE: 2002-05-02  
 ; PRIOR APPLICATION NUMBER: 60/237,862  
 ; PRIOR FILING DATE: 2000-10-04  
 ; NUMBER OF SEQ ID NOS: 62  
 ; SOFTWARE: PatentIn Ver. 2.1  
 ; SEQ ID NO 16  
 ; LENGTH: 931  
 ; TYPE: PRT  
 ; ORGANISM: Caenorhabditis elegans  
 US-09-970-944-16

Query Match 85.9%; Score 249; DB 10; Length 931;  
 Best Local Similarity 82.0%; Pred. No. 3.5e-19;  
 Matches 41; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRCTNPAPLNGGAFCEGQNVQKTACATLC 50  
 |||||::: |||:|:|:|:|||||:| | ||  
 Db 264 STWTEWSVCNSRCGRGYQKRTRTCTNPAPLNGGAFCEGQSVQKIAC TTLC 313

RESULT 9

US-09-970-944-17

; Sequence 17, Application US/09970944  
 ; Publication No. US20030204052A1  
 ; GENERAL INFORMATION:  
 ; APPLICANT: Herrman, John L  
 ; APPLICANT: Rastelli, Luca  
 ; APPLICANT: Shimkets, Richard A  
 ; TITLE OF INVENTION: No. US20030204052A1e1 Proteins and Nucleic Acids Encoding Same and  
 ; TITLE OF INVENTION: Antibodies Directed Against these Proteins  
 ; FILE REFERENCE: 21402-138  
 ; CURRENT APPLICATION NUMBER: US/09/970,944  
 ; CURRENT FILING DATE: 2002-05-02  
 ; PRIOR APPLICATION NUMBER: 60/237,862  
 ; PRIOR FILING DATE: 2000-10-04  
 ; NUMBER OF SEQ ID NOS: 62  
 ; SOFTWARE: PatentIn Ver. 2.1  
 ; SEQ ID NO 17  
 ; LENGTH: 931  
 ; TYPE: PRT  
 ; ORGANISM: Caenorhabditis elegans  
 US-09-970-944-17



```
; PRIOR FILING DATE: 2000-10-06
; PRIOR APPLICATION NUMBER: 60/238,373
; PRIOR FILING DATE: 2000-10-06
; PRIOR APPLICATION NUMBER: 60/238,372
; PRIOR FILING DATE: 2000-10-06
; PRIOR APPLICATION NUMBER: 60/238,383
; PRIOR FILING DATE: 2000-10-06
; PRIOR APPLICATION NUMBER: 60/238,382
; PRIOR FILING DATE: 2000-10-06
; PRIOR APPLICATION NUMBER: 60/275,892
; PRIOR FILING DATE: 2001-03-14
; PRIOR APPLICATION NUMBER: 60/296,860
; PRIOR FILING DATE: 2001-06-08
; NUMBER OF SEQ ID NOS: 198
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 121
; LENGTH: 931
; TYPE: PRT
; ORGANISM: Mus musculus
US-09-972-211-121
```

```
Query Match          85.9%; Score 249; DB 11; Length 931;
Best Local Similarity 82.0%; Pred. No. 3.5e-19;
Matches    41; Conservative    6; Mismatches    3; Indels    0; Gaps    0;
```

```
Qy      1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50
          |||||::: ||||:|:|:|:|||||:| | | |
Db      264 STWTEWSVCNSRCGRGYQKRTRCTNPAPLNGGAFCEGQSVQKIACCTTLC 313
```

# RESULT 11

US-09-972-211-122

```
; Sequence 122, Application US/09972211
; Publication No. US20040048245A1
; GENERAL INFORMATION:
; APPLICANT: Shimkets, Richard A
; APPLICANT: Taupier Jr, Raymond J
; APPLICANT: Burgess, Catherine E
; APPLICANT: Zerhusen, Bryan D
; APPLICANT: Mezes, Peter S
; APPLICANT: Rastelli, Luca
; APPLICANT: Malyankar, Uriel M
; APPLICANT: Grosse, William M
; APPLICANT: Alsobrook II, John P
; APPLICANT: Lepley, Denise M
; APPLICANT: Spytek, Kimberly Ann
; APPLICANT: Li, Li
; APPLICANT: Edinger, Shlomit
; APPLICANT: Gerlach, Valerie
; APPLICANT: Ellerman, Karen
; APPLICANT: MacDougall, John R
; APPLICANT: Gunther, Erik
; APPLICANT: Millet, Isabelle
; APPLICANT: Stone, David J
; APPLICANT: Smithson, Glennnda
; APPLICANT: Szekeres Jr, Edward S
```



```

; TITLE OF INVENTION: No. US20040048245A1el Human Proteins, Polynucleotides
Encoding Them And
; TITLE OF INVENTION: Methods Of Using The Same
; FILE REFERENCE: 21402-141
; CURRENT APPLICATION NUMBER: US/09/972,211
; CURRENT FILING DATE: 2001-10-05
; PRIOR APPLICATION NUMBER: 60/238,325
; PRIOR FILING DATE: 2000-10-05
; PRIOR APPLICATION NUMBER: 60/238,323
; PRIOR FILING DATE: 2000-10-05
; PRIOR APPLICATION NUMBER: 60/238,400
; PRIOR FILING DATE: 2000-10-06
; PRIOR APPLICATION NUMBER: 60/238,397
; PRIOR FILING DATE: 2000-10-06
; PRIOR APPLICATION NUMBER: 60/238,401
; PRIOR FILING DATE: 2000-10-06
; PRIOR APPLICATION NUMBER: 60/238,379
; PRIOR FILING DATE: 2000-10-06
; PRIOR APPLICATION NUMBER: 60/238,402
; PRIOR FILING DATE: 2000-10-06
; PRIOR APPLICATION NUMBER: 30/238,384
; PRIOR FILING DATE: 2000-10-06
; PRIOR APPLICATION NUMBER: 60/238,373
; PRIOR FILING DATE: 2000-10-06
; PRIOR APPLICATION NUMBER: 60/238,372
; PRIOR FILING DATE: 2000-10-06
; PRIOR APPLICATION NUMBER: 60/238,383
; PRIOR FILING DATE: 2000-10-06
; PRIOR APPLICATION NUMBER: 60/238,382
; PRIOR FILING DATE: 2000-10-06
; PRIOR APPLICATION NUMBER: 60/275,892
; PRIOR FILING DATE: 2001-03-14
; PRIOR APPLICATION NUMBER: 60/296,860
; PRIOR FILING DATE: 2001-06-08
; NUMBER OF SEQ ID NOS: 198
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 122
; LENGTH: 931
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-972-211-122

```

```

Query Match          85.9%; Score 249; DB 11; Length 931;
Best Local Similarity 82.0%; Pred. No. 3.5e-19;
Matches 41; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

```

```

Qy      1 STWTEWSVCSASCGRGWQKRSRSC TNPAPLNGGAFCEGQNVQKTACATLC 50
        |||||::: |||:|:|:|:|||||:| | ||
Db      264 STWTEWSVCNSRCGRGYQKRTRTCTNPAPLNGGAFCEGQSVQKIAC TTLC 313

```

```

RESULT 12
US-09-972-211-125
; Sequence 125, Application US/09972211
; Publication No. US20040048245A1
; GENERAL INFORMATION:
; APPLICANT: Shimkets, Richard A

```

; APPLICANT: Taupier Jr, Raymond J  
; APPLICANT: Burgess, Catherine E  
; APPLICANT: Zerhusen, Bryan D  
; APPLICANT: Mezes, Peter S  
; APPLICANT: Rastelli, Luca  
; APPLICANT: Malyankar, Uriel M  
; APPLICANT: Grosse, William M  
; APPLICANT: Alsobrook II, John P  
; APPLICANT: Lepley, Denise M  
; APPLICANT: Spytek, Kimberly Ann  
; APPLICANT: Li, Li  
; APPLICANT: Edinger, Shlomit  
; APPLICANT: Gerlach, Valerie  
; APPLICANT: Ellerman, Karen  
; APPLICANT: MacDougall, John R  
; APPLICANT: Gunther, Erik  
; APPLICANT: Millet, Isabelle  
; APPLICANT: Stone, David J  
; APPLICANT: Smithson, Glennda  
; APPLICANT: Szekeres Jr, Edward S  
; TITLE OF INVENTION: No. US20040048245A1el Human Proteins, Polynucleotides  
Encoding Them And  
; TITLE OF INVENTION: Methods Of Using The Same  
; FILE REFERENCE: 21402-141  
; CURRENT APPLICATION NUMBER: US/09/972,211  
; CURRENT FILING DATE: 2001-10-05  
; PRIOR APPLICATION NUMBER: 60/238,325  
; PRIOR FILING DATE: 2000-10-05  
; PRIOR APPLICATION NUMBER: 60/238,323  
; PRIOR FILING DATE: 2000-10-05  
; PRIOR APPLICATION NUMBER: 60/238,400  
; PRIOR FILING DATE: 2000-10-06  
; PRIOR APPLICATION NUMBER: 60/238,397  
; PRIOR FILING DATE: 2000-10-06  
; PRIOR APPLICATION NUMBER: 60/238,401  
; PRIOR FILING DATE: 2000-10-06  
; PRIOR APPLICATION NUMBER: 60/238,379  
; PRIOR FILING DATE: 2000-10-06  
; PRIOR APPLICATION NUMBER: 60/238,402  
; PRIOR FILING DATE: 2000-10-06  
; PRIOR APPLICATION NUMBER: 30/238,384  
; PRIOR FILING DATE: 2000-10-06  
; PRIOR APPLICATION NUMBER: 60/238,373  
; PRIOR FILING DATE: 2000-10-06  
; PRIOR APPLICATION NUMBER: 60/238,372  
; PRIOR FILING DATE: 2000-10-06  
; PRIOR APPLICATION NUMBER: 60/238,383  
; PRIOR FILING DATE: 2000-10-06  
; PRIOR APPLICATION NUMBER: 60/238,382  
; PRIOR FILING DATE: 2000-10-06  
; PRIOR APPLICATION NUMBER: 60/275,892  
; PRIOR FILING DATE: 2001-03-14  
; PRIOR APPLICATION NUMBER: 60/296,860  
; PRIOR FILING DATE: 2001-06-08  
; NUMBER OF SEQ ID NOS: 198  
; SOFTWARE: PatentIn Ver. 2.1  
; SEQ ID NO 125

```
;   LENGTH: 931
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-09-972-211-125
```

Query Match 85.9%; Score 249; DB 11; Length 931;  
Best Local Similarity 82.0%; Pred. No. 3.5e-19;  
Matches 41; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50  
| | | | | | | | : : | | | : | | : | : | | | | | | | | | | : | | | | |  
Db 264 STWTEWSVCNSRCGRGYQKRTRTCTNPAPLNGGAFCEGQSVQKIACTTLC 313

## RESULT 13

US-10-087-684-35

; Sequence 35, Application US/10087684

; Publication No. US20040029116A1

## ; GENERAL INFORMATION:

;  
; APPLICANT: Edinger, Shlomit R.  
;  
; APPLICANT: MacDougall, John R.  
;  
; APPLICANT: Millet, Isabelle  
;  
; APPLICANT: Ellerman, Karen  
;  
; APPLICANT: Stone, David J.  
;  
; APPLICANT: Grosse, William M.  
;  
; APPLICANT: Lepley, Denise M.  
;  
; APPLICANT: Rieger, Daniel K.  
;  
; APPLICANT: Burgess, Cathereine E.  
;  
; APPLICANT: Casman, Stacie, J.  
;  
; APPLICANT: Spytek, Kimberly A.  
;  
; APPLICANT: Boldog, Ferenc L.  
;  
; APPLICANT: Li, Li  
;  
; APPLICANT: Padigaru, Muralidhara  
;  
; APPLICANT: Mishra, Vishnu  
;  
; APPLICANT: Shenoy, Suresh G.  
;  
; APPLICANT: Rastelli, Luca  
;  
; APPLICANT: Tchernev, Velizar T.  
;  
; APPLICANT: Vernet, Corine A.M.  
;  
; APPLICANT: Zerhusen, Bryan D.  
;  
; APPLICANT: Malyankar, Uriel M.  
;  
; APPLICANT: Guo, Xiaojia  
;  
; APPLICANT: Miller, Charles E.  
;  
; APPLICANT: Gangolli, Esha A.

; TITLE OF INVENTION: PROTEINS AND NUCLEIC ACIDS ENCODING SAME

; FILE REFERENCE: 21402-214 CIP

; CURRENT APPLICATION NUMBER: US/10/087,684

; CURRENT FILING DATE: 2003-03-10

; PRIOR APPLICATION NUMBER: 60/253,834

; PRIOR FILING DATE: 2000-11-29

; PRIOR APPLICATION NUMBER: 60/250,926

; PRIOR FILING DATE: 2000-11-30

; PRIOR APPLICATION NUMBER: 60/264,180

; PRIOR FILING DATE: 2001-01-25

; PRIOR APPLICATION NUMBER: 60/274,194

; PRIOR FILING DATE: 2001-03-08

; PRIOR APPLICATION NUMBER: 60/313,656

; PRIOR FILING DATE: 2001-08-20



```
; PRIOR FILING DATE: 2001-01-25
; PRIOR APPLICATION NUMBER: 60/274,194
; PRIOR FILING DATE: 2001-03-08
; PRIOR APPLICATION NUMBER: 60/313,656
; PRIOR FILING DATE: 2001-08-20
; PRIOR APPLICATION NUMBER: 60/327,456
; PRIOR FILING DATE: 2001-10-05
; NUMBER OF SEQ ID NOS: 220
; SOFTWARE: CuraSeqList version 0.1
; SEQ ID NO 36
;   LENGTH: 931
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-087-684-36
```

```
Query Match          85.9%;   Score 249;   DB 15;   Length 931;
Best Local Similarity 82.0%;   Pred. No. 3.5e-19;
Matches    41;   Conservative    6;   Mismatches    3;   Indels    0;   Gaps    0;
```

```
Qy      1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50
          |||||:::||||:|:|||||:|||||:|||||:|||||:|||||
Db      264 STWTEWSVCNSRCGRGYQKRTRTCTNPAPLNGGAFCEGQSVQKIACCTTLC 313
```

# RESULT 15

US-10-218-779-36

```
; Sequence 36, Application US/10218779
; Publication No. US20040029222A1
```

## ; GENERAL INFORMATION:

```
; APPLICANT: Edinger, Shlomit
; APPLICANT: MacDougall, John
; APPLICANT: Millet, Isabelle
; APPLICANT: Ellerman, Karen
; APPLICANT: Stone, David
; APPLICANT: Gerlach, Valerie
; APPLICANT: Grosse, William
; APPLICANT: Alsobrook II, John
; APPLICANT: Lepley, Denise
; APPLICANT: Rieger, Daniel
; APPLICANT: Burgess, Catherine
; APPLICANT: Casman, Stacie
; APPLICANT: Spytek, Kimberly
; APPLICANT: Boldog, Ferenc
; APPLICANT: Li, Li
; APPLICANT: Padigaru, Muralidhara
; APPLICANT: Mishra, Vishnu
; APPLICANT: Patturajan, Meera
; APPLICANT: Shenoy, Suresh
; APPLICANT: Rastelli, Luca
; APPLICANT: Tchernev, Velizar
; APPLICANT: Vernet, Corine
; APPLICANT: Zerhusen, Bryan
; APPLICANT: Malyankar, Uriel
; APPLICANT: Guo, Xiaojia
; APPLICANT: Miller, Charles
; APPLICANT: Gangolli, Esha
; TITLE OF INVENTION: Proteins and Nucleic Acids Encoding Same
```

```

; FILE REFERENCE: 21402-214
; CURRENT APPLICATION NUMBER: US/10/218,779
; CURRENT FILING DATE: 2002-08-14
; PRIOR APPLICATION NUMBER: 60/253,834
; PRIOR FILING DATE: 2000-11-29
; PRIOR APPLICATION NUMBER: 60/250,-926
; PRIOR FILING DATE: 2000-11-30
; PRIOR APPLICATION NUMBER: 60/264,180
; PRIOR FILING DATE: 2001-01-25
; PRIOR APPLICATION NUMBER: 60/313,656
; PRIOR FILING DATE: 2001-08-20
; PRIOR APPLICATION NUMBER: 60/327,456
; PRIOR FILING DATE: 2001-10-05
; NUMBER OF SEQ ID NOS: 216
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 36
; LENGTH: 931
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-218-779-36

```

```

Query Match          85.9%; Score 249; DB 15; Length 931;
Best Local Similarity 82.0%; Pred. No. 3.5e-19;
Matches 41; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

```

```

Qy      1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50
        |||||::: |||:|:|:|:|||||:| | | |
Db      264 STWTEWSVCNSRCGRGYQKRTRCTNPAPLNGGAFCEGQSVQKIACTTLC 313

```

```

Search completed: March 1, 2005, 09:51:30
Job time : 9.62324 secs

```

OM protein - protein search, using sw model

Run on: March 1, 2005, 08:41:47 ; Search time 9.14662 Seconds  
 (without alignments)  
 2799.282 Million cell updates/sec

Title: US-10-624-932-2\_COPY\_246\_295  
 Perfect score: 290  
 Sequence: 1 STWTEWSVCSASCGRGWQKR.....NGGAFCEGQNVQKTACATLC 50

Scoring table: BLOSUM62  
 Gapop 10.0 , Gapext 0.5

Searched: 1612378 seqs, 512079187 residues

Total number of hits satisfying chosen parameters: 1612378

Minimum DB seq length: 0  
 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
 Maximum Match 100%  
 Listing first 45 summaries

Database : UniProt\_03:\*  
 1: uniprot\_sprot:\*  
 2: uniprot\_trembl:\*

Pred. No. is the number of results predicted by chance to have a  
 score greater than or equal to the score of the result being printed,  
 and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query			DB ID	Description
		Match	Length	%		
1	290	100.0	898	1	UN5A_MOUSE	Q8kls4 mus musculu
2	290	100.0	898	1	UN5A_RAT	O08721 rattus norv
3	249	85.9	931	1	UN5C_CHICK	Q7t2z5 gallus gall
4	249	85.9	931	1	UN5C_HUMAN	O95185 homo sapien
5	249	85.9	931	1	UN5C_MOUSE	O08747 mus musculu
6	244	84.1	931	1	UN5C_RAT	Q761x5 rattus norv
7	239	82.4	945	1	UN5B_HUMAN	Q8izj1 homo sapien
8	239	82.4	953	1	UN5D_HUMAN	Q6uxz4 homo sapien
9	238	82.1	945	1	UN5B_MOUSE	Q8kls3 mus musculu
10	238	82.1	945	1	UN5B_RAT	O08722 rattus norv
11	238	82.1	956	1	UN5D_MOUSE	Q8kls2 mus musculu
12	219	75.5	943	1	UN5B_XENLA	Q8jgt4 xenopus lae
13	148	51.0	335	2	Q8BVQ2	Q8bvq2 m mus muscu
14	148	51.0	844	2	Q8BXU8	Q8bxu8 m mus muscu
15	148	51.0	1074	1	SM5A_HUMAN	Q13591 homo sapien

16	148	51.0	1077	1	SM5A_MOUSE	Q62217	mus musculu
17	147	50.7	1092	2	Q6UY12	Q6uy12	homo sapien
18	147	50.7	1093	1	SM5B_HUMAN	Q9p283	homo sapien
19	147	50.7	1151	2	Q6DD89	Q6dd89	homo sapien
20	144	49.7	1388	2	Q7QKD0	Q7qkd0	anopheles g
21	143	49.3	478	2	Q8BVE5	Q8bve5	m mus muscu
22	143	49.3	632	2	Q6ZPQ8	Q6zpq8	mus musculu
23	143	49.3	1088	2	Q6PCK8	Q6pck8	xenopus lae
24	143	49.3	1093	1	SM5B_MOUSE	Q60519	mus musculu
25	143	49.3	1122	2	Q7TT33	Q7tt33	mus musculu
26	143	49.3	1244	2	Q69YJ3	Q69yj3	homo sapien
27	143	49.3	2673	2	Q96SC3	Q96sc3	homo sapien
28	143	49.3	5636	2	Q96RW7	Q96rw7	homo sapien
29	139	47.9	1224	1	AT16_HUMAN	Q8te57	homo sapien
30	138.5	47.8	4998	2	Q8CG65	Q8cg65	mus musculu
31	137	47.2	584	1	CO8A_HUMAN	P07357	homo sapien
32	136	46.9	769	2	Q8MRL5	Q8mrl5	drosophila
33	136	46.9	839	2	Q7YS95	Q7ys95	bos taurus
34	136	46.9	1059	2	Q9W493	Q9w493	drosophila
35	136	46.9	1081	2	Q9U631	Q9u631	drosophila
36	136	46.9	1091	2	Q7YU67	Q7yu67	drosophila
37	136	46.9	1093	2	Q9VTT0	Q9vtt0	drosophila
38	135.5	46.7	5141	2	Q700K0	Q700k0	rattus norv
39	132.5	45.7	1072	1	UNC5_DROME	Q95tu8	drosophila
40	132	45.5	833	2	Q8K384	Q8k384	mus musculu
41	132	45.5	837	1	ATS4_HUMAN	O75173	homo sapien
42	132	45.5	837	2	Q6UWA8	Q6uwa8	homo sapien
43	132	45.5	845	2	Q8BNJ2	Q8bnj2	mus musculu
44	132	45.5	893	2	Q6A017	Q6a017	mus musculu
45	131	45.2	900	2	Q8K206	Q8k206	mus musculu

# ALIGNMENTS

## RESULT 1

### UN5A\_MOUSE

ID UN5A\_MOUSE STANDARD; PRT; 898 AA.  
AC Q8K1S4; Q6PEF7; Q80T71;  
DT 25-OCT-2004 (Rel. 45, Created)  
DT 25-OCT-2004 (Rel. 45, Last sequence update)  
DT 25-OCT-2004 (Rel. 45, Last annotation update)  
DE Netrin receptor UNC5A precursor (Unc-5 homolog A) (Unc-5 homolog 1).  
GN Name=Unc5a; Synonyms=Kiaa1976, Unc5hl;  
OS Mus musculus (Mouse).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
OX NCBI\_TaxID=10090;  
RN [1]  
RP SEQUENCE FROM N.A. (ISOFORM 1), AND TISSUE SPECIFICITY.  
RX MEDLINE=22239710; PubMed=12351186; DOI=10.1016/S0925-4773(02)00248-4;  
RA Engelkamp D.;  
RT "Cloning of three mouse unc-5 genes and their expression patterns at  
RT mid-gestation.";  
RL Mech. Dev. 118:191-197(2002).  
RN [2]  
RP SEQUENCE FROM N.A. (ISOFORM 3).



RC TISSUE=Brain;  
 RX MEDLINE=22579291; PubMed=12693553;  
 RA Okazaki N., Kikuno R., Ohara R., Inamoto S., Aizawa H., Yuasa S.,  
 RA Nakajima D., Nagase T., Ohara O., Koga H.;  
 RT "Prediction of the coding sequences of mouse homologues of KIAA gene:  
 RT II. The complete nucleotide sequences of 400 mouse KIAA-homologous  
 RT cDNAs identified by screening of terminal sequences of cDNA clones  
 RT randomly sampled from size-fractionated libraries.";  
 RL DNA Res. 10:35-48(2003).  
 RN [3]  
 RP SEQUENCE FROM N.A. (ISOFORM 2).  
 RC STRAIN=C57BL/6; TISSUE=Brain;  
 RX MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;  
 RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,  
 RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,  
 RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,  
 RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,  
 RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,  
 RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,  
 RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,  
 RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,  
 RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,  
 RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,  
 RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,  
 RA Fahey J., Helton E., Kettelman M., Madan A., Rodrigues S., Sanchez A.,  
 RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,  
 RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,  
 RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,  
 RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,  
 RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;  
 RT "Generation and initial analysis of more than 15,000 full-length human  
 RT and mouse cDNA sequences.";  
 RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).  
 CC -!- FUNCTION: Receptor for netrin required for axon guidance. Mediates  
 CC axon repulsion of neuronal growth cones in the developing nervous  
 CC system upon ligand binding. Axon repulsion in growth cones may be  
 CC caused by its association with DCC that may trigger signaling for  
 CC repulsion. It also acts as a dependence receptor required for  
 CC apoptosis induction when not associated with netrin ligand (By  
 CC similarity).  
 CC -!- SUBUNIT: Interacts with the cytoplasmic part of DCC. Interacts  
 CC with MAGED1. Interacts with PRKCABP, possibly mediating some  
 CC interaction with PKC (By similarity).  
 CC -!- SUBCELLULAR LOCATION: Type I membrane protein. The interaction  
 CC with PRKCABP regulates its surface expression and leads to its  
 CC removal from surface of neurons and growth cones (By similarity).  
 CC -!- ALTERNATIVE PRODUCTS:  
 CC Event=Alternative splicing; Named isoforms=3;  
 CC Name=1;  
 CC IsoId=Q8K1S4-1; Sequence=Displayed;  
 CC Name=2;  
 CC IsoId=Q8K1S4-2; Sequence=VSP\_011697;  
 CC Note=No experimental confirmation available;  
 CC Name=3;  
 CC IsoId=Q8K1S4-3; Sequence=VSP\_011696;  
 CC Note=No experimental confirmation available;  
 CC -!- TISSUE SPECIFICITY: Restricted to central nervous system.

CC    -!- DOMAIN: The ZU5 domain mediates the interaction with MAGED1, which  
 CC           participates in the induction of apoptosis (By similarity).  
 CC    -!- PTM: Phosphorylated by PKC in vitro. Phosphorylated on cytoplasmic  
 CC           tyrosine residues (By similarity).  
 CC    -!- PTM: Proteolytically cleaved by caspases during apoptosis. The  
 CC           cleavage does not take place when the receptor is associated with  
 CC           netrin ligand. Its cleavage by caspases is required to induce  
 CC           apoptosis (By similarity).  
 CC    -!- SIMILARITY: Belongs to the UNC-5 family.  
 CC    -!- SIMILARITY: Contains 1 death domain.  
 CC    -!- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.  
 CC    -!- SIMILARITY: Contains 1 immunoglobulin-like domain.  
 CC    -!- SIMILARITY: Contains 2 TSP type-1 domains.  
 CC    -!- SIMILARITY: Contains 1 ZU5 domain.  
 CC    -----  
 CC    This SWISS-PROT entry is copyright. It is produced through a collaboration  
 CC    between the Swiss Institute of Bioinformatics and the EMBL outstation -  
 CC    the European Bioinformatics Institute. There are no restrictions on its  
 CC    use by non-profit institutions as long as its content is in no way  
 CC    modified and this statement is not removed. Usage by and for commercial  
 CC    entities requires a license agreement (See <http://www.isb-sib.ch/announce/>  
 CC    or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
 CC    -----  
 DR    EMBL; AJ487852; CAD32250.1; -.  
 DR    EMBL; AK122575; BAC65857.1; ALT\_INIT.  
 DR    EMBL; BC058084; AAH58084.1; -.  
 DR    HSSP; P07996; 1LSL.  
 DR    MGD; MGI:894682; Unc5a.  
 DR    InterPro; IPR000488; Death.  
 DR    InterPro; IPR011029; DEATH\_like.  
 DR    InterPro; IPR003599; Ig.  
 DR    InterPro; IPR007110; Ig-like.  
 DR    InterPro; IPR000884; TSP1.  
 DR    InterPro; IPR008085; TSP\_1.  
 DR    InterPro; IPR000906; ZU5.  
 DR    Pfam; PF00531; Death; 1.  
 DR    Pfam; PF00047; ig; 1.  
 DR    Pfam; PF00090; TSP\_1; 2.  
 DR    Pfam; PF00791; ZU5; 1.  
 DR    PRINTS; PR01705; TSP1REPEAT.  
 DR    SMART; SM00005; DEATH; 1.  
 DR    SMART; SM00409; IG; 1.  
 DR    SMART; SM00209; TSP1; 2.  
 DR    SMART; SM00218; ZU5; 1.  
 DR    PROSITE; PS50017; DEATH\_DOMAIN; FALSE\_NEG.  
 DR    PROSITE; PS50835; IG\_LIKE; 1.  
 DR    PROSITE; PS50092; TSP1; 2.  
 KW    Alternative splicing; Apoptosis; Developmental protein;  
 KW    Immunoglobulin domain; Phosphorylation; Receptor; Repeat; Signal;  
 KW    Transmembrane.  
 FT    SIGNAL           1       25       Potential.  
 FT    CHAIN           26      898      Netrin receptor UNC5A.  
 FT    DOMAIN          26      361      Extracellular (Potential).  
 FT    TRANSMEM       362      382      Potential.  
 FT    DOMAIN          383      898      Cytoplasmic (Potential).  
 FT    DOMAIN          44      141      Ig-like.  
 FT    DOMAIN          155     234      Ig-like C2-type.

FT	DOMAIN	242	296	TSP type-1 1.
FT	DOMAIN	298	350	TSP type-1 2.
FT	DOMAIN	495	598	ZU5.
FT	DOMAIN	817	897	Death.
FT	SITE	396	397	Cleavage (by caspase-3) (By similarity).
FT	SITE	661	679	Interaction with DCC (By similarity).
FT	DISULFID	65	124	By similarity.
FT	DISULFID	170	221	By similarity.
FT	CARBOHYD	107	107	N-linked (GlcNAc. . .) (Potential).
FT	CARBOHYD	218	218	N-linked (GlcNAc. . .) (Potential).
FT	CARBOHYD	343	343	N-linked (GlcNAc. . .) (Potential).
FT	VARSPPLIC	1	790	Missing (in isoform 3).
FT				/FTId=VSP_011696.
FT	VARSPPLIC	241	296	Missing (in isoform 2).
FT				/FTId=VSP_011697.
FT	CONFLICT	217	217	A -> P (in Ref. 3).
SQ	SEQUENCE	898 AA;	98856 MW;	59F04BA2E196C1DB CRC64;

Query Match 100.0%; Score 290; DB 1; Length 898;  
 Best Local Similarity 100.0%; Pred. No. 8.2e-26;  
 Matches 50; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50  
 ||||||||||||||||||||||||||||||||||||||||||||||||||||  
 Db 246 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 295

## RESULT 2

### UN5A\_RAT

ID UN5A\_RAT STANDARD; PRT; 898 AA.  
 AC O08721;  
 DT 25-OCT-2004 (Rel. 45, Created)  
 DT 25-OCT-2004 (Rel. 45, Last sequence update)  
 DT 25-OCT-2004 (Rel. 45, Last annotation update)  
 DE Netrin receptor UNC5A precursor (Unc-5 homolog A) (Unc-5 homolog 1).  
 GN Name=Unc5a; Synonyms=Unc5h1;  
 OS Rattus norvegicus (Rat).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.  
 OX NCBI\_TaxID=10116;  
 RN [1]  
 RP SEQUENCE FROM N.A., FUNCTION, SUBCELLULAR LOCATION, AND TISSUE  
 RP SPECIFICITY.  
 RC TISSUE=Ventral spinal cord;  
 RX MEDLINE=97271897; PubMed=9126742;  
 RA Leonardo E.D., Hinck L., Masu M., Keino-Masu K., Ackerman S.L.,  
 RA Tessier-Lavigne M.;  
 RT "Vertebrate homologues of C. elegans UNC-5 are candidate netrin  
 RT receptors.";  
 RL Nature 386:833-838(1997).  
 RN [2]  
 RP FUNCTION, AND INTERACTION WITH DCC.  
 RX PubMed=10399920;  
 RA Hong K., Hinck L., Nishiyama M., Poo M.-M., Tessier-Lavigne M.,  
 RA Stein E.;  
 RT "A ligand-gated association between cytoplasmic domains of UNC5 and  
 RT DCC family receptors converts netrin-induced growth cone attraction to

RT repulsion.";  
 RL Cell 97:927-941(1999).  
 RN [3]  
 RP TISSUE SPECIFICITY.  
 RX PubMed=11472849;  
 RA Barrett C., Guthrie S.;  
 RT "Expression patterns of the netrin receptor UNC5H1 among developing  
 RT motor neurons in the embryonic rat hindbrain.";  
 RL Mech. Dev. 106:163-166(2001).  
 RN [4]  
 RP FUNCTION.  
 RX PubMed=11387206; DOI=10.1093/emboj/20.11.2715;  
 RA Llambi F., Causeret F., Bloch-Gallego E., Mehlen P.;  
 RT "Netrin-1 acts as a survival factor via its receptors UNC5H and DCC.";  
 RL EMBO J. 20:2715-2722(2001).  
 RN [5]  
 RP FUNCTION, SUBCELLULAR LOCATION, AND INTERACTION WITH MAGED1.  
 RX PubMed=12598531; DOI=10.1074/jbc.M300415200;  
 RA Williams M.E., Strickland P., Watanabe K., Hinck L.;  
 RT "UNC5H1 induces apoptosis via its juxtamembrane region through an  
 RT interaction with NRAGE.";  
 RL J. Biol. Chem. 278:17483-17490(2003).  
 RN [6]  
 RP INTERACTION WITH PRKCABP, PHOSPHORYLATION, AND MUTAGENESIS OF  
 RP 896-ALA--CYS-898.  
 RX PubMed=14672991; DOI=23/36/11279;  
 RA Williams M.E., Wu S.C.-Y., McKenna W.L., Hinck L.;  
 RT "Surface expression of the netrin receptor UNC5H1 is regulated through  
 RT a protein kinase C-interacting protein/protein kinase-dependent  
 RT mechanism.";  
 RL J. Neurosci. 23:11279-11288(2003).  
 CC -!- FUNCTION: Receptor for netrin required for axon guidance. Mediates  
 CC axon repulsion of neuronal growth cones in the developing nervous  
 CC system upon ligand binding. Axon repulsion in growth cones may be  
 CC caused by its association with DCC that may trigger signaling for  
 CC repulsion. It also acts as a dependence receptor required for  
 CC apoptosis induction when not associated with netrin ligand.  
 CC -!- SUBUNIT: Interacts with the cytoplasmic part of DCC. Interacts  
 CC with MAGED1. Interacts with PRKCABP, possibly mediating some  
 CC interaction with PKC.  
 CC -!- SUBCELLULAR LOCATION: Type I membrane protein. The interaction  
 CC with PRKCABP regulates its surface expression and leads to its  
 CC removal from surface of neurons and growth cones.  
 CC -!- TISSUE SPECIFICITY: Mainly expressed in regions of differentiating  
 CC neurons. Expressed at early stages of neural tube development in  
 CC the ventral spinal cord. In developing hindbrain, it colocalizes  
 CC with a number of cranial motor neuron subpopulations from  
 CC embryonic E11 to E14, while DCC is expressed by motor neurons at  
 CC E12. Also expressed in non-neural structures, such as the basal  
 CC plane of the hindbrain and midbrain, in the developing  
 CC hypothalamus, thalamus and in the pallidum.  
 CC -!- DOMAIN: The ZU5 domain mediates the interaction with MAGED1, which  
 CC participates in the induction of apoptosis.  
 CC -!- PTM: Phosphorylated on cytoplasmic tyrosine residues (By  
 CC similarity). Phosphorylated by PKC in vitro.  
 CC -!- PTM: Proteolytically cleaved by caspases during apoptosis. The  
 CC cleavage does not take place when the receptor is associated with

```

CC      netrin ligand. Its cleavage by caspases is required to induce
CC      apoptosis.
CC      -!- SIMILARITY: Belongs to the UNC-5 family.
CC      -!- SIMILARITY: Contains 1 death domain.
CC      -!- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.
CC      -!- SIMILARITY: Contains 1 immunoglobulin-like domain.
CC      -!- SIMILARITY: Contains 2 TSP type-1 domains.
CC      -!- SIMILARITY: Contains 1 ZU5 domain.
CC      -----
CC      This SWISS-PROT entry is copyright. It is produced through a collaboration
CC      between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC      the European Bioinformatics Institute. There are no restrictions on its
CC      use by non-profit institutions as long as its content is in no way
CC      modified and this statement is not removed. Usage by and for commercial
CC      entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC      or send an email to license@isb-sib.ch).
CC      -----
DR      EMBL; U87305; AAB57678.1; -.
DR      HSSP; P07996; 1LSL.
DR      RGD; 621755; Unc5h1.
DR      InterPro; IPR000488; Death.
DR      InterPro; IPR011029; DEATH_like.
DR      InterPro; IPR003599; Ig.
DR      InterPro; IPR007110; Ig-like.
DR      InterPro; IPR000884; TSP1.
DR      InterPro; IPR008085; TSP_1.
DR      InterPro; IPR000906; ZU5.
DR      Pfam; PF00531; Death; 1.
DR      Pfam; PF00047; ig; 1.
DR      Pfam; PF00090; TSP_1; 2.
DR      Pfam; PF00791; ZU5; 1.
DR      PRINTS; PR01705; TSP1REPEAT.
DR      SMART; SM00005; DEATH; 1.
DR      SMART; SM00409; IG; 1.
DR      SMART; SM00209; TSP1; 2.
DR      SMART; SM00218; ZU5; 1.
DR      PROSITE; PS50017; DEATH_DOMAIN; FALSE_NEG.
DR      PROSITE; PS50835; IG_LIKE; 1.
DR      PROSITE; PS50092; TSP1; 2.
KW      Apoptosis; Developmental protein; Immunoglobulin domain;
KW      Phosphorylation; Receptor; Repeat; Signal; Transmembrane.
FT      SIGNAL          1      25      Potential.
FT      CHAIN           26      898      Netrin receptor UNC5A.
FT      DOMAIN          26      361      Extracellular (Potential).
FT      TRANSMEM        362      382      Potential.
FT      DOMAIN          383      898      Cytoplasmic (Potential).
FT      DOMAIN          44      141      Ig-like.
FT      DOMAIN          155      238      Ig-like C2-type.
FT      DOMAIN          242      296      TSP type-1 1.
FT      DOMAIN          298      350      TSP type-1 2.
FT      DOMAIN          495      598      ZU5.
FT      DOMAIN          817      897      Death.
FT      SITE            396      397      Cleavage (by caspase-3) (By similarity).
FT      SITE            661      679      Interaction with DCC (By similarity).
FT      DISULFID         65      124      By similarity.
FT      DISULFID        170      221      By similarity.
FT      CARBOHYD        107      107      N-linked (GlcNAc. . .) (Potential).

```

FT CARBOHYD 218 218 N-linked (GlcNAc. . .) (Potential).  
 FT CARBOHYD 343 343 N-linked (GlcNAc. . .) (Potential).  
 FT MUTAGEN 896 898 Missing: Abolishes interaction with  
 FT PRKCABP.  
 SQ SEQUENCE 898 AA; 98840 MW; 7A3CBCB9E7ACA135 CRC64;

Query Match 100.0%; Score 290; DB 1; Length 898;  
 Best Local Similarity 100.0%; Pred. No. 8.2e-26;  
 Matches 50; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 STWTEWSVCSASCGRGWQKRSRSC'N'PAPLNGGAFCEGQNVQKTACATLC 50  
 ||||||||||||||||||||||||||||||||||||||||||||  
 Db 246 STWTEWSVCSASCGRGWQKRSRSC'N'PAPLNGGAFCEGQNVQKTACATLC 295

# RESULT 3

## UN5C\_CHICK

ID UN5C\_CHICK STANDARD; PRT; 931 AA.  
 AC Q7T2Z5;  
 DT 25-OCT-2004 (Rel. 45, Created)  
 DT 25-OCT-2004 (Rel. 45, Last sequence update)  
 DT 25-OCT-2004 (Rel. 45, Last annotation update)  
 DE Netrin receptor UNC5C precursor (Unc-5 homolog C) (Unc-5 homolog 3)  
 DE (cUNC-5H3).  
 GN Name=UNC5C;  
 OS Gallus gallus (Chicken).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;  
 OC Gallus.  
 OX NCBI\_TaxID=9031;  
 RN [1]  
 RP SEQUENCE FROM N.A., AND TISSUE SPECIFICITY.  
 RX PubMed=12799087;  
 RA Guan W., Condic M.L.;  
 RT "Characterization of Netrin-1, Neogenin and cUNC-5H3 expression during  
 RT chick dorsal root ganglia development.";  
 RL Gene Expr. Patterns 3:369-373(2003).  
 CC -!- FUNCTION: Receptor for netrin required for axon guidance. Mediates  
 CC axon repulsion of neuronal growth cones in the developing nervous  
 CC system upon ligand binding (By similarity).  
 CC -!- SUBCELLULAR LOCATION: Type I membrane protein (By similarity).  
 CC -!- TISSUE SPECIFICITY: Restricted to proprioceptive neurons.  
 CC -!- PTM: Phosphorylated on cytoplasmic tyrosine residues (By  
 CC similarity).  
 CC -!- SIMILARITY: Belongs to the UNC-5 family.  
 CC -!- SIMILARITY: Contains 1 death domain.  
 CC -!- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.  
 CC -!- SIMILARITY: Contains 1 immunoglobulin-like domain.  
 CC -!- SIMILARITY: Contains 2 TSP type-1 domains.  
 CC -!- SIMILARITY: Contains 1 ZU5 domain.  
 CC -----  
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration  
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -  
 CC the European Bioinformatics Institute. There are no restrictions on its  
 CC use by non-profit institutions as long as its content is in no way  
 CC modified and this statement is not removed. Usage by and for commercial  
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>)

CC or send an email to license@isb-sib.ch).

CC

DR EMBL; AY187310; AAO67275.1; -.

DR InterPro; IPR000488; Death.

DR InterPro; IPR007110; Ig-like.

DR InterPro; IPR003598; Ig\_c2.

DR InterPro; IPR000884; TSP1.

DR InterPro; IPR000906; ZU5.

DR Pfam; PF00531; Death; 1.

DR Pfam; PF00047; ig; 1.

DR Pfam; PF00090; TSP\_1; 2.

DR Pfam; PF00791; ZU5; 1.

DR SMART; SM00005; DEATH; 1.

DR SMART; SM00408; IGc2; 1.

DR SMART; SM00209; TSP1; 2.

DR SMART; SM00218; ZU5; 1.

DR PROSITE; PS50017; DEATH\_DOMAIN; FALSE\_NEG.

DR PROSITE; PS50835; IG\_LIKE; 1.

DR PROSITE; PS50092; TSP1; 2.

KW Developmental protein; Immunoglobulin domain; Phosphorylation;

KW Receptor; Repeat; Signal; Transmembrane.

FT SIGNAL 1 39 Potential.

FT CHAIN 40 931 Netrin receptor UNC5C.

FT DOMAIN 40 380 Extracellular (Potential).

FT TRANSMEM 381 401 Potential.

FT DOMAIN 402 931 Cytoplasmic (Potential).

FT DOMAIN 62 159 Ig-like.

FT DOMAIN 161 256 Ig-like C2-type.

FT DOMAIN 260 314 TSP type-1 1.

FT DOMAIN 316 368 TSP type-1 2.

FT DOMAIN 528 631 ZU5.

FT DOMAIN 850 929 Death.

FT DISULFID 83 142 By similarity.

FT DISULFID 188 239 By similarity.

FT CARBOHYD 236 236 N-linked (GlcNAc. . .) (Potential).

FT CARBOHYD 361 361 N-linked (GlcNAc. . .) (Potential).

SQ SEQUENCE 931 AA; 102906 MW; 1E23A0D84F2E2C62 CRC64;

Query Match 85.9%; Score 249; DB 1; Length 931;

Best Local Similarity 82.0%; Pred. No. 6.1e-21;

Matches 41; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRCTNPAPLNGGAFCEGQNVQKTACATLC 50

||||||| |:: ||||:||||:||||||| || || ||

Db 264 STWTEWSACNSRCGRGFQKRTRCTNPAPLNGGAFCEGQNVQKIACTTLC 313

#### RESULT 4

UN5C\_HUMAN

ID UN5C\_HUMAN STANDARD; PRT; 931 AA.

AC O95185; Q8IUT0;

DT 25-OCT-2004 (Rel. 45, Created)

DT 25-OCT-2004 (Rel. 45, Last sequence update)

DT 25-OCT-2004 (Rel. 45, Last annotation update)

DE Netrin receptor UNC5C precursor (Unc-5 homolog C) (Unc-5 homolog 3).

GN Name=UNC5C; Synonyms=UNC5H3;

OS Homo sapiens (Human).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
 OX NCBI\_TaxID=9606;  
 RN [1]  
 RP SEQUENCE FROM N.A. (ISOFORM 1), AND TISSUE SPECIFICITY.  
 RC TISSUE=Brain;  
 RX MEDLINE=99000841; PubMed=9782087; DOI=10.1006/geno.1998.5425;  
 RA Ackerman S.L., Knowles B.B.;  
 RT "Cloning and mapping of the UNC5C gene to human chromosome 4q21-q23.";  
 RL Genomics 52:205-208(1998).  
 RN [2]  
 RP SEQUENCE FROM N.A. (ISOFORM 2).  
 RC TISSUE=Lung;  
 RX MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;  
 RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,  
 RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,  
 RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,  
 RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,  
 RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,  
 RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,  
 RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,  
 RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,  
 RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,  
 RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,  
 RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,  
 RA Fahey J., Helton E., Kettelman M., Madan A., Rodrigues S., Sanchez A.,  
 RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,  
 RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,  
 RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,  
 RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,  
 RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;  
 RT "Generation and initial analysis of more than 15,000 full-length human  
 RT and mouse cDNA sequences.";  
 RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).  
 RN [3]  
 RP DOWN-REGULATION IN CANCER.  
 RX PubMed=12655055; DOI=10.1073/pnas.0738063100;  
 RA Thiebault K., Mazelin L., Pays L., Llambi F., Joly M.-O.,  
 RA Scoazec J.-Y., Saurin J.-C., Romeo G., Mehlen P.;  
 RT "The netrin-1 receptors UNC5H are putative tumor suppressors  
 RT controlling cell death commitment.";  
 RL Proc. Natl. Acad. Sci. U.S.A. 100:4173-4178(2003).  
 CC -!- FUNCTION: Receptor for netrin required for axon guidance. Mediates  
 CC axon repulsion of neuronal growth cones in the developing nervous  
 CC system upon ligand binding. Axon repulsion in growth cones may be  
 CC caused by its association with DCC that may trigger signaling for  
 CC repulsion. Also involved in corticospinal tract axon guidances  
 CC independently of DCC. It also acts as a dependence receptor  
 CC required for apoptosis induction when not associated with netrin  
 CC ligand (By similarity).  
 CC -!- SUBUNIT: Interacts with the cytoplasmic part of DCC (By  
 CC similarity).  
 CC -!- SUBCELLULAR LOCATION: Type I membrane protein (By similarity).  
 CC -!- ALTERNATIVE PRODUCTS:  
 CC Event=Alternative splicing; Named isoforms=2;  
 CC Name=1;  
 CC IsoId=O95185-1; Sequence=Displayed;



```

CC      Name=2;
CC      IsoId=O95185-2; Sequence=VSP_011700, VSP_011701;
CC      -!- TISSUE SPECIFICITY: Mainly expressed in brain. Also expressed in
CC      kidney. Not expressed in developing or adult lung.
CC      -!- PTM: Phosphorylated on different cytoplasmic tyrosine residues.
CC      Phosphorylation of Tyr-568 leads to an interaction with PTPN11
CC      phosphatase, suggesting that its activity is regulated by
CC      phosphorylation/dephosphorylation. Tyrosine phosphorylation is
CC      netrin-dependent (By similarity).
CC      -!- PTM: Proteolytically cleaved by caspases during apoptosis. The
CC      cleavage does not take place when the receptor is associated with
CC      netrin ligand. Its cleavage by caspases is required to induce
CC      apoptosis (By similarity).
CC      -!- MISCELLANEOUS: Down-regulated in multiple cancers including
CC      colorectal, breast, ovary, uterus, stomach, lung, or kidney
CC      cancers.
CC      -!- SIMILARITY: Belongs to the UNC-5 family.
CC      -!- SIMILARITY: Contains 1 death domain.
CC      -!- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.
CC      -!- SIMILARITY: Contains 1 immunoglobulin-like domain.
CC      -!- SIMILARITY: Contains 2 TSP type-1 domains.
CC      -!- SIMILARITY: Contains 1 ZU5 domain.
CC      -----
CC      This SWISS-PROT entry is copyright. It is produced through a collaboration
CC      between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC      the European Bioinformatics Institute. There are no restrictions on its
CC      use by non-profit institutions as long as its content is in no way
CC      modified and this statement is not removed. Usage by and for commercial
CC      entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC      or send an email to license@isb-sib.ch).
CC      -----
DR      EMBL; AF055634; AAC67491.1; -.
DR      EMBL; BC041156; AAH41156.1; -.
DR      HSSP; P07996; 1LSL.
DR      Genew; HGNC:12569; UNC5C.
DR      MIM; 603610; -.
DR      GO; GO:0005042; F:netrin receptor activity; TAS.
DR      GO; GO:0007411; P:axon guidance; TAS.
DR      GO; GO:0007420; P:brain development; TAS.
DR      InterPro; IPR000488; Death.
DR      InterPro; IPR011029; DEATH_like.
DR      InterPro; IPR007110; Ig-like.
DR      InterPro; IPR003598; Ig_c2.
DR      InterPro; IPR000884; TSP1.
DR      InterPro; IPR008085; TSP_1.
DR      InterPro; IPR000906; ZU5.
DR      Pfam; PF00531; Death; 1.
DR      Pfam; PF00047; ig; 1.
DR      Pfam; PF00090; TSP_1; 2.
DR      Pfam; PF00791; ZU5; 1.
DR      PRINTS; PR01705; TSP1REPEAT.
DR      SMART; SM00005; DEATH; 1.
DR      SMART; SM00408; IGc2; 1.
DR      SMART; SM00209; TSP1; 2.
DR      SMART; SM00218; ZU5; 1.
DR      PROSITE; PS50017; DEATH_DOMAIN; FALSE_NEG.
DR      PROSITE; PS50835; IG_LIKE; 1.

```

DR PROSITE; PS50092; TSP1; 2.  
KW Alternative splicing; Apoptosis; Developmental protein;  
KW Immunoglobulin domain; Phosphorylation; Polymorphism; Receptor;  
KW Repeat; Signal; Transmembrane.  
FT SIGNAL 1 40 Potential.  
FT CHAIN 41 931 Netrin receptor UNC5C.  
FT DOMAIN 41 380 Extracellular (Potential).  
FT TRANSMEM 381 401 Potential.  
FT DOMAIN 402 931 Cytoplasmic (Potential).  
FT DOMAIN 62 159 Ig-like.  
FT DOMAIN 161 256 Ig-like C2-type.  
FT DOMAIN 260 314 TSP type-1 1.  
FT DOMAIN 316 368 TSP type-1 2.  
FT DOMAIN 528 631 ZU5.  
FT DOMAIN 850 929 Death.  
FT SITE 415 416 Cleavage (by caspase-3) (By similarity).  
FT SITE 694 712 Interaction with DCC (By similarity).  
FT DISULFID 83 142 By similarity.  
FT DISULFID 188 239 By similarity.  
FT MOD\_RES 568 568 Phosphotyrosine (By similarity).  
FT CARBOHYD 236 236 N-linked (GlcNAc . . .) (Potential).  
FT CARBOHYD 361 361 N-linked (GlcNAc . . .) (Potential).  
FT VARSPLIC 370 370 T -> SFIYPISTEQRTQNEYGFSS (in isoform 2).  
FT /FTId=VSP\_011700.  
FT VARSPLIC 579 931 Missing (in isoform 2).  
FT /FTId=VSP\_011701.  
FT VARIANT 37 37 G -> V (in dbSNP:2306715).  
FT /FTId=VAR\_019731.  
FT VARIANT 721 721 T -> M (in dbSNP:2289043).  
FT /FTId=VAR\_019732.  
FT CONFLICT 219 219 T -> I (in Ref. 1).  
FT CONFLICT 489 489 S -> T (in Ref. 1).  
SQ SEQUENCE 931 AA; 103101 MW; EFD71122C98DABB8 CRC64;

Query Match 85.9%; Score 249; DB 1; Length 931;  
Best Local Similarity 82.0%; Pred. No. 6.1e-21;  
Matches 41; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50  
|||||||:: ||||:||||:|:|||||||:||||| || ||  
Db 264 STWTEWSVCNSRCGRGYQKRTRTCTNPAPLNGGAFCEGQSVQKIACCTLC 313

# RESULT 5

## UN5C\_MOUSE

ID UN5C\_MOUSE STANDARD; PRT; 931 AA.  
AC O08747; Q8CD16;  
DT 25-OCT-2004 (Rel. 45, Created)  
DT 25-OCT-2004 (Rel. 45, Last sequence update)  
DT 25-OCT-2004 (Rel. 45, Last annotation update)  
DE Netrin receptor UNC5C precursor (Unc-5 homolog C) (Unc-5 homolog 3)  
DE (Rostral cerebellar malformation protein).  
GN Name=Unc5c; Synonyms=Rcm, Unc5h3;  
OS Mus musculus (Mouse).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
OX NCBI\_TaxID=10090;

RN [1]  
 RP SEQUENCE FROM N.A. (ISOFORM 1), FUNCTION, DISEASE, AND TISSUE  
 RP SPECIFICITY.  
 RC STRAIN=C57B6/SJL;  
 RX MEDLINE=97271898; PubMed=9126743;  
 RA Ackerman S.L., Kozak L.P., Przyborski S.A., Rund L.A., Boyer B.B.,  
 RA Knowles B.B.;  
 RT "The mouse rostral cerebellar malformation gene encodes an UNC-5-like  
 RT protein.";  
 RL Nature 386:838-842(1997).  
 RN [2]  
 RP SEQUENCE FROM N.A. (ISOFORM 2).  
 RC STRAIN=C57BL/6J; TISSUE=Testis;  
 RX MEDLINE=22354683; PubMed=12466851; DOI=10.1038/nature01266;  
 RA Okazaki Y., Furuno M., Kasukawa T., Adachi J., Bono H., Kondo S.,  
 RA Nikaido I., Osato N., Saito R., Suzuki H., Yamanaka I., Kiyosawa H.,  
 RA Yagi K., Tomaru Y., Hasegawa Y., Nogami A., Schonbach C., Gojobori T.,  
 RA Baldarelli R., Hill D.P., Bult C., Hume D.A., Quackenbush J.,  
 RA Schriml L.M., Kanapin A., Matsuda H., Batalov S., Beisel K.W.,  
 RA Blake J.A., Bradt D., Brusic V., Chothia C., Corbani L.E., Cousins S.,  
 RA Dalla E., Dragani T.A., Fletcher C.F., Forrest A., Frazer K.S.,  
 RA Gaasterland T., Gariboldi M., Gissi C., Godzik A., Gough J.,  
 RA Grimmond S., Gustincich S., Hirokawa N., Jackson I.J., Jarvis E.D.,  
 RA Kanai A., Kawaji H., Kawasaki Y., Kedzierski R.M., King B.L.,  
 RA Konagaya A., Kurochkin I.V., Lee Y., Lenhard B., Lyons P.A.,  
 RA Maglott D.R., Maltais L., Marchionni L., McKenzie L., Miki H.,  
 RA Nagashima T., Numata K., Okido T., Pavan W.J., Pertea G., Pesole G.,  
 RA Petrovsky N., Pillai R., Pontius J.U., Qi D., Ramachandran S.,  
 RA Ravasi T., Reed J.C., Reed D.J., Reid J., Ring B.Z., Ringwald M.,  
 RA Sandelin A., Schneider C., Semple C.A., Setou M., Shimada K.,  
 RA Sultana R., Takenaka Y., Taylor M.S., Teasdale R.D., Tomita M.,  
 RA Verardo R., Wagner L., Wahlestedt C., Wang Y., Watanabe Y., Wells C.,  
 RA Wilming L.G., Wynshaw-Boris A., Yanagisawa M., Yang I., Yang L.,  
 RA Yuan Z., Zavolan M., Zhu Y., Zimmer A., Carninci P., Hayatsu N.,  
 RA Hirozane-Kishikawa T., Konno H., Nakamura M., Sakazume N., Sato K.,  
 RA Shiraki T., Waki K., Kawai J., Aizawa K., Arakawa T., Fukuda S.,  
 RA Hara A., Hashizume W., Imotani K., Ishii Y., Itoh M., Kagawa I.,  
 RA Miyazaki A., Sakai K., Sasaki D., Shibata K., Shinagawa A.,  
 RA Yasunishi A., Yoshino M., Waterston R., Lander E.S., Rogers J.,  
 RA Birney E., Hayashizaki Y.;  
 RT "Analysis of the mouse transcriptome based on functional annotation of  
 RT 60,770 full-length cDNAs.";  
 RL Nature 420:563-573(2002).  
 RN [3]  
 RP FUNCTION, AND TISSUE SPECIFICITY.  
 RX PubMed=9389662;  
 RA Przyborski S.A., Knowles B.B., Ackerman S.L.;  
 RT "Embryonic phenotype of Unc5h3 mutant mice suggests chemorepulsion  
 RT during the formation of the rostral cerebellar boundary.";  
 RL Development 125:41-50(1998).  
 RN [4]  
 RP INTERACTION WITH DCC.  
 RX PubMed=10399920;  
 RA Hong K., Hinck L., Nishiyama M., Poo M.-M., Tessier-Lavigne M.,  
 RA Stein E.;  
 RT "A ligand-gated association between cytoplasmic domains of UNC5 and  
 RT DCC family receptors converts netrin-induced growth cone attraction to

RT repulsion.";

RL Cell 97:927-941(1999).

RN [5]

RP PHOSPHORYLATION SITE TYR-568, AND MUTAGENESIS OF TYR-568.

RX PubMed=11533026; DOI=10.1074/jbc.M103872200;

RA Tong J., Killeen M., Steven R., Binns K.L., Culotti J., Pawson T.;

RT "Netrin stimulates tyrosine phosphorylation of the UNC-5 family of

RT netrin receptors and induces Shp2 binding to the RCM cytodomain.";

RL J. Biol. Chem. 276:40917-40925(2001).

RN [6]

RP FUNCTION.

RX PubMed=12451134; DOI=22/23/10346;

RA Finger J.H., Bronson R.T., Harris B., Johnson K., Przyborski S.A.,

RA Ackerman S.L.;

RT "The netrin 1 receptors Unc5h3 and Dcc are necessary at multiple

RT choice points for the guidance of corticospinal tract axons.";

RL J. Neurosci. 22:10346-10356(2002).

CC -!- FUNCTION: Receptor for netrin required for axon guidance. Mediates

CC axon repulsion of neuronal growth cones in the developing nervous

CC system upon ligand binding. Axon repulsion in growth cones may be

CC caused by its association with DCC that may trigger signaling for

CC repulsion. Also involved in corticospinal tract axon guidances

CC independently of DCC. It also acts as a dependence receptor

CC required for apoptosis induction when not associated with netrin

CC ligand.

CC -!- SUBUNIT: Interacts with the cytoplasmic part of DCC.

CC -!- SUBCELLULAR LOCATION: Type I membrane protein (By similarity).

CC -!- ALTERNATIVE PRODUCTS:

CC Event=Alternative splicing; Named isoforms=2;

CC Name=1;

CC IsoId=O08747-1; Sequence=Displayed;

CC Name=2;

CC IsoId=O08747-2; Sequence=VSP\_011702;

CC -!- TISSUE SPECIFICITY: Mainly expressed in regions of differentiating

CC neurons. Highly expressed in brain and lung. Weakly expressed in

CC testis, ovary, spleen, thymus and bladder. Expressed at very low

CC level in kidney, intestine and salivary gland.

CC -!- PTM: Phosphorylated on different cytoplasmic tyrosine residues.

CC Phosphorylation of Tyr-568 leads to an interaction with PTPN11

CC phosphatase, suggesting that its activity is regulated by

CC phosphorylation/dephosphorylation. Tyrosine phosphorylation is

CC netrin-dependent.

CC -!- PTM: Proteolytically cleaved by caspases during apoptosis. The

CC cleavage does not take place when the receptor is associated with

CC netrin ligand. Its cleavage by caspases is required to induce

CC apoptosis (By similarity).

CC -!- DISEASE: Defects in Unc5c are the cause of rostral cerebellar

CC malformation (Rcm). Rcm is characterized by cerebellar and

CC midbrain defects, apparently as a result of abnormal neuronal

CC migration.

CC -!- SIMILARITY: Belongs to the UNC-5 family.

CC -!- SIMILARITY: Contains 1 death domain.

CC -!- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.

CC -!- SIMILARITY: Contains 1 immunoglobulin-like domain.

CC -!- SIMILARITY: Contains 2 TSP type-1 domains.

CC -!- SIMILARITY: Contains 1 ZU5 domain.

CC -----

CC This SWISS-PROT entry is copyright. It is produced through a collaboration  
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -  
 CC the European Bioinformatics Institute. There are no restrictions on its  
 CC use by non-profit institutions as long as its content is in no way  
 CC modified and this statement is not removed. Usage by and for commercial  
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>  
 CC or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).

---

DR EMBL; U72634; AAB54103.1; -.  
 DR EMBL; AK031655; BAC27495.1; -.  
 DR HSSP; P07996; 1LSL.  
 DR MGD; MGI:1095412; Unc5c.  
 DR GO; GO:0005886; C:plasma membrane; IC.  
 DR GO; GO:0005042; F:netrin receptor activity; IDA.  
 DR GO; GO:0005515; F:protein binding; IDA.  
 DR GO; GO:0007420; P:brain development; IMP.  
 DR GO; GO:0030334; P:regulation of cell migration; IMP.  
 DR InterPro; IPR000488; Death.  
 DR InterPro; IPR011029; DEATH\_like.  
 DR InterPro; IPR007110; Ig-like.  
 DR InterPro; IPR003598; Ig\_c2.  
 DR InterPro; IPR000884; TSP1.  
 DR InterPro; IPR008085; TSP\_1.  
 DR InterPro; IPR000906; ZU5.  
 DR Pfam; PF00531; Death; 1.  
 DR Pfam; PF00047; ig; 1.  
 DR Pfam; PF00090; TSP\_1; 2.  
 DR Pfam; PF00791; ZU5; 1.  
 DR PRINTS; PR01705; TSP1REPEAT.  
 DR SMART; SM00005; DEATH; 1.  
 DR SMART; SM00408; IGc2; 1.  
 DR SMART; SM00209; TSP1; 2.  
 DR SMART; SM00218; ZU5; 1.  
 DR PROSITE; PS50017; DEATH\_DOMAIN; FALSE\_NEG.  
 DR PROSITE; PS50835; IG\_LIKE; 1.  
 DR PROSITE; PS50092; TSP1; 2.  
 KW Alternative splicing; Apoptosis; Developmental protein;  
 KW Immunoglobulin domain; Phosphorylation; Receptor; Repeat; Signal;  
 KW Transmembrane.

FT	SIGNAL	1	40	Potential.
FT	CHAIN	41	931	Netrin receptor UNC5C.
FT	DOMAIN	41	380	Extracellular (Potential).
FT	TRANSMEM	381	401	Potential.
FT	DOMAIN	402	931	Cytoplasmic (Potential).
FT	DOMAIN	62	159	Ig-like.
FT	DOMAIN	161	256	Ig-like C2-type.
FT	DOMAIN	260	314	TSP type-1 1.
FT	DOMAIN	316	368	TSP type-1 2.
FT	DOMAIN	528	631	ZU5.
FT	DOMAIN	850	929	Death.
FT	SITE	415	416	Cleavage (by caspase-3) (By similarity).
FT	SITE	694	712	Interaction with DCC (By similarity).
FT	DISULFID	83	142	By similarity.
FT	DISULFID	188	239	By similarity.
FT	MOD_RES	568	568	Phosphotyrosine.
FT	CARBOHYD	236	236	N-linked (GlcNAc. . .) (Potential).
FT	CARBOHYD	361	361	N-linked (GlcNAc. . .) (Potential).

FT VARSPLIC 370 370 A -> GFIYPISTEHRPQNEYGFSS (in isoform 2).  
 FT /FTId=VSP\_011702.  
 FT MUTAGEN 568 568 Y->F: Abolishes interaction with PTPN11,  
 FT leading to a increased level of  
 FT phosphorylation.  
 FT CONFLICT 16 16 L -> I (in Ref. 2).  
 FT CONFLICT 733 733 H -> R (in Ref. 2).  
 FT CONFLICT 924 924 S -> Y (in Ref. 2).  
 SQ SEQUENCE 931 AA; 103062 MW; 8A5D951A4EECA179 CRC64;

Query Match 85.9%; Score 249; DB 1; Length 931;  
 Best Local Similarity 82.0%; Pred. No. 6.1e-21;  
 Matches 41; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50  
 |||||::: ||||:||||:|||||:|||||:|||| || ||  
 Db 264 STWTEWSVCNSRCGRGYQKRTRTCTNPAPLNGGAFCEGQSVQKIACTTLC 313

# RESULT 6

## UN5C\_RAT

ID UN5C\_RAT STANDARD; PRT; 931 AA.  
 AC Q761X5;  
 DT 25-OCT-2004 (Rel. 45, Created)  
 DT 25-OCT-2004 (Rel. 45, Last sequence update)  
 DT 25-OCT-2004 (Rel. 45, Last annotation update)  
 DE Netrin receptor UNC5C precursor (Unc-5 homolog C) (Unc-5 homolog 3).  
 GN Name=Unc5c; Synonyms=Unc5h3;  
 OS Rattus norvegicus (Rat).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.  
 OX NCBI\_TaxID=10116;  
 RN [1]  
 RP SEQUENCE FROM N.A., AND DISEASE.  
 RX PubMed=15010202; DOI=10.1016/j.molbrainres.2003.12.003;  
 RA Kuramoto T., Kuwamura M., Serikawa T.;  
 RT "Rat neurological mutations cerebellar vermis defect and hobble are  
 RT caused by mutations in the netrin-1 receptor gene Unc5h3.";  
 RL Brain Res. Mol. Brain Res. 122:103-108(2004).  
 RN [2]  
 RP FUNCTION.  
 RX PubMed=11387206; DOI=10.1093/emboj/20.11.2715;  
 RA Llambi F., Causeret F., Bloch-Gallego E., Mehlen P.;  
 RT "Netrin-1 acts as a survival factor via its receptors UNC5H and DCC.";  
 RL EMBO J. 20:2715-2722(2001).  
 CC -!- FUNCTION: Receptor for netrin required for axon guidance. Mediates  
 CC axon repulsion of neuronal growth cones in the developing nervous  
 CC system upon ligand binding. Axon repulsion in growth cones may be  
 CC caused by its association with DCC that may trigger signaling for  
 CC repulsion. Also involved in corticospinal tract axon guidances  
 CC independently of DCC. It also acts as a dependence receptor  
 CC required for apoptosis induction when not associated with netrin  
 CC ligand.  
 CC -!- SUBUNIT: Interacts with the cytoplasmic part of DCC (By  
 CC similarity).  
 CC -!- SUBCELLULAR LOCATION: Type I membrane protein (By similarity).  
 CC -!- TISSUE SPECIFICITY: Mainly expressed in brain. Also expressed in

CC kidney. Not expressed in developing or adult lung.  
 CC -!- PTM: Phosphorylated on different cytoplasmic tyrosine residues.  
 CC Phosphorylation of Tyr-568 leads to an interaction with PTPN11  
 CC phosphatase, suggesting that its activity is regulated by  
 CC phosphorylation/dephosphorylation. Tyrosine phosphorylation is  
 CC netrin-dependent (By similarity).  
 CC -!- PTM: Proteolytically cleaved by caspases during apoptosis. The  
 CC cleavage does not take place when the receptor is associated with  
 CC netrin ligand. Its cleavage by caspases is required to induce  
 CC apoptosis.  
 CC -!- DISEASE: Defects in Unc5c are the cause of cerebellar vermis  
 CC defect (cvd) and hobble (hob) phenotypes. Cvd and hob rats exhibit  
 CC cerebellar and midbrain defects, possibly as a result of abnormal  
 CC neuronal migration, and exhibit laminar structure abnormalities in  
 CC the fused cerebellar hemispheres and ectopic cerebellar tissues in  
 CC the cerebello-pontine junction.  
 CC -!- SIMILARITY: Belongs to the UNC-5 family.  
 CC -!- SIMILARITY: Contains 1 death domain.  
 CC -!- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.  
 CC -!- SIMILARITY: Contains 1 immunoglobulin-like domain.  
 CC -!- SIMILARITY: Contains 2 TSP type-1 domains.  
 CC -!- SIMILARITY: Contains 1 ZU5 domain.  
 CC -----  
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration  
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -  
 CC the European Bioinformatics Institute. There are no restrictions on its  
 CC use by non-profit institutions as long as its content is in no way  
 CC modified and this statement is not removed. Usage by and for commercial  
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>  
 CC or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
 CC -----  
 DR EMBL; AB118026; BAD05181.1; -.  
 DR RGD; 735109; Unc5c.  
 DR InterPro; IPR000488; Death.  
 DR InterPro; IPR011029; DEATH\_like.  
 DR InterPro; IPR003599; Ig.  
 DR InterPro; IPR007110; Ig-like.  
 DR InterPro; IPR003598; Ig\_c2.  
 DR InterPro; IPR000884; TSP1.  
 DR InterPro; IPR008085; TSP\_1.  
 DR InterPro; IPR000906; ZU5.  
 DR Pfam; PF00531; Death; 1.  
 DR Pfam; PF00047; ig; 1.  
 DR Pfam; PF00090; TSP\_1; 2.  
 DR Pfam; PF00791; ZU5; 1.  
 DR PRINTS; PR01705; TSP1REPEAT.  
 DR SMART; SM00005; DEATH; 1.  
 DR SMART; SM00409; IG; 1.  
 DR SMART; SM00408; IGc2; 1.  
 DR SMART; SM00209; TSP1; 2.  
 DR SMART; SM00218; ZU5; 1.  
 DR PROSITE; PS50017; DEATH\_DOMAIN; FALSE\_NEG.  
 DR PROSITE; PS50835; IG\_LIKE; 1.  
 DR PROSITE; PS50092; TSP1; 2.  
 KW Apoptosis; Developmental protein; Immunoglobulin domain;  
 KW Phosphorylation; Receptor; Repeat; Signal; Transmembrane.  
 FT SIGNAL 1 40 Potential.

FT	CHAIN	41	931	Netrin receptor UNC5C.
FT	DOMAIN	41	380	Extracellular (Potential).
FT	TRANSMEM	381	401	Potential.
FT	DOMAIN	402	931	Cytoplasmic (Potential).
FT	DOMAIN	62	159	Ig-like.
FT	DOMAIN	161	256	Ig-like C2-type.
FT	DOMAIN	260	314	TSP type-1 1.
FT	DOMAIN	316	368	TSP type-1 2.
FT	DOMAIN	528	631	ZU5.
FT	DOMAIN	850	929	Death.
FT	SITE	415	416	Cleavage (by caspase-3) (By similarity).
FT	SITE	694	712	Interaction with DCC (By similarity).
FT	DISULFID	83	142	By similarity.
FT	DISULFID	188	239	By similarity.
FT	MOD_RES	568	568	Phosphotyrosine (By similarity).
FT	CARBOHYD	236	236	N-linked (GlcNAc. . .) (Potential).
FT	CARBOHYD	361	361	N-linked (GlcNAc. . .) (Potential).
SQ	SEQUENCE	931 AA;	103134 MW;	25B183A97BCB8401 CRC64;

Query Match 84.1%; Score 244; DB 1; Length 931;  
 Best Local Similarity 80.0%; Pred. No. 2.4e-20;  
 Matches 40; Conservative 6; Mismatches 4; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSTCTNPAPLNGGAFCEGQNVQKTACATLC 50  
 ||| |||||:: ||||:||||:|||||||:||||| || |||  
 Db 264 STWAEWSVCNSRCGRGYQKRTRTCTNPAPLNGGAFCEGQSVQKIACTTLC 313

# RESULT 7

## UN5B\_HUMAN

ID UN5B\_HUMAN STANDARD; PRT; 945 AA.  
 AC Q8IZJ1; Q86SN3; Q8N1Y2; Q9H9F3;  
 DT 25-OCT-2004 (Rel. 45, Created)  
 DT 25-OCT-2004 (Rel. 45, Last sequence update)  
 DT 25-OCT-2004 (Rel. 45, Last annotation update)  
 DE Netrin receptor UNC5B precursor (Unc-5 homolog B) (Unc-5 homolog 2)  
 DE (p53-regulated receptor for death and life protein 1)  
 DE (UNQ1883/PRO4326).  
 GN Name=UNC5B; Synonyms=P53RDL1, UNC5H2;  
 OS Homo sapiens (Human).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
 OX NCBI\_TaxID=9606;  
 RN [1]  
 RP SEQUENCE FROM N.A. (ISOFORM 2), TISSUE SPECIFICITY, AND INTERACTION  
 RP WITH GNAI2.  
 RC TISSUE=Lung;  
 RX MEDLINE=22246081; PubMed=12359238; DOI=10.1016/S0006-291X(02)02277-5;  
 RA Komatsuzaki K., Dalvin S., Kinane T.B.;  
 RT "Modulation of G(ialpha(2)) signaling by the axonal guidance molecule  
 RT UNC5H2.";  
 RL Biochem. Biophys. Res. Commun. 297:898-905(2002).  
 RN [2]  
 RP SEQUENCE FROM N.A. (ISOFORM 1), FUNCTION, AND MUTAGENESIS OF ASP-412.  
 RX PubMed=12598906; DOI=10.1038/ncb943;  
 RA Tanikawa C., Matsuda K., Fukuda S., Nakamura Y., Arakawa H.;  
 RT "p53RDL1 regulates of p53-dependent apoptosis.";



RL Nat. Cell Biol. 5:216-223(2003).  
 RN [3]  
 RP SEQUENCE FROM N.A. (ISOFORM 1).  
 RX MEDLINE=22887296; PubMed=12975309; DOI=10.1101/gr.1293003;  
 RA Clark H.F., Gurney A.L., Abaya E., Baker K., Baldwin D., Brush J.,  
 RA Chen J., Chow B., Chui C., Crowley C., Currell B., Deuel B., Dowd P.,  
 RA Eaton D., Foster J., Grimaldi C., Gu Q., Hass P.E., Heldens S.,  
 RA Huang A., Kim H.S., Klimowski L., Jin Y., Johnson S., Lee J.,  
 RA Lewis L., Liao D., Mark M., Robbie E., Sanchez C., Schoenfeld J.,  
 RA Seshagiri S., Simmons L., Singh J., Smith V., Stinson J., Vagts A.,  
 RA Vandlen R., Watanabe C., Wieand D., Woods K., Xie M.-H., Yansura D.,  
 RA Yi S., Yu G., Yuan J., Zhang M., Zhang Z., Goddard A., Wood W.I.,  
 RA Godowski P., Gray A.;  
 RT "The secreted protein discovery initiative (SPDI), a large-scale  
 RT effort to identify novel human secreted and transmembrane proteins: a  
 RT bioinformatics assessment.";  
 RL Genome Res. 13:2265-2270(2003).  
 RN [4]  
 RP SEQUENCE OF 361-945 FROM N.A.  
 RC TISSUE=Amygdala, and Teratocarcinoma;  
 RX PubMed=14702039; DOI=10.1038/ngl285;  
 RA Ota T., Suzuki Y., Nishikawa T., Otsuki T., Sugiyama T., Irie R.,  
 RA Wakamatsu A., Hayashi K., Sato H., Nagai K., Kimura K., Makita H.,  
 RA Sekine M., Obayashi M., Nishi T., Shibahara T., Tanaka T., Ishii S.,  
 RA Yamamoto J.-I., Saito K., Kawai Y., Isono Y., Nakamura Y.,  
 RA Nagahari K., Murakami K., Yasuda T., Iwayanagi T., Wagatsuma M.,  
 RA Shiratori A., Sudo H., Hosoiri T., Kaku Y., Kodaira H., Kondo H.,  
 RA Sugawara M., Takahashi M., Kanda K., Yokoi T., Furuya T., Kikkawa E.,  
 RA Omura Y., Abe K., Kamihara K., Katsuta N., Sato K., Tanikawa M.,  
 RA Yamazaki M., Ninomiya K., Ishibashi T., Yamashita H., Murakawa K.,  
 RA Fujimori K., Tanai H., Kimata M., Watanabe M., Hiraoka S., Chiba Y.,  
 RA Ishida S., Ono Y., Takiguchi S., Watanabe S., Yosida M., Hotuta T.,  
 RA Kusano J., Kanehori K., Takahashi-Fujii A., Hara H., Tanase T.-O.,  
 RA Nomura Y., Togiya S., Komai F., Hara R., Takeuchi K., Arita M.,  
 RA Imose N., Musashino K., Yuuki H., Oshima A., Sasaki N., Aotsuka S.,  
 RA Yoshikawa Y., Matsunawa H., Ichihara T., Shiohata N., Sano S.,  
 RA Moriya S., Momiyama H., Satoh N., Takami S., Terashima Y., Suzuki O.,  
 RA Nakagawa S., Senoh A., Mizoguchi H., Goto Y., Shimizu F., Wakebe H.,  
 RA Hishigaki H., Watanabe T., Sugiyama A., Takemoto M., Kawakami B.,  
 RA Yamazaki M., Watanabe K., Kumagai A., Itakura S., Fukuzumi Y.,  
 RA Fujimori Y., Komiyama M., Tashiro H., Tanigami A., Fujiwara T.,  
 RA Ono T., Yamada K., Fujii Y., Ozaki K., Hirao M., Ohmori Y.,  
 RA Kawabata A., Hikiji T., Kobatake N., Inagaki H., Ikema Y., Okamoto S.,  
 RA Okitani R., Kawakami T., Noguchi S., Itoh T., Shigeta K., Senba T.,  
 RA Matsumura K., Nakajima Y., Mizuno T., Morinaga M., Sasaki M.,  
 RA Togashi T., Oyama M., Hata H., Watanabe M., Komatsu T.,  
 RA Mizushima-Sugano J., Satoh T., Shirai Y., Takahashi Y., Nakagawa K.,  
 RA Okumura K., Nagase T., Nomura N., Kikuchi H., Masuho Y., Yamashita R.,  
 RA Nakai K., Yada T., Nakamura Y., Ohara O., Isogai T., Sugano S.;  
 RT "Complete sequencing and characterization of 21,243 full-length human  
 RT cDNAs.";  
 RL Nat. Genet. 36:40-45(2004).  
 RN [5]  
 RP DOWN-REGULATION IN CANCER.  
 RX PubMed=12655055; DOI=10.1073/pnas.0738063100;  
 RA Thiebault K., Mazelin L., Pays L., Llambi F., Joly M.-O.,  
 RA Scoazec J.-Y., Saurin J.-C., Romeo G., Mehlen P.;

RT "The netrin-1 receptors UNC5H are putative tumor suppressors  
 RT controlling cell death commitment.";  
 RL Proc. Natl. Acad. Sci. U.S.A. 100:4173-4178(2003).  
 CC -!- FUNCTION: Receptor for netrin required for axon guidance. Mediates  
 CC axon repulsion of neuronal growth cones in the developing nervous  
 CC system upon ligand binding. Axon repulsion in growth cones may be  
 CC caused by its association with DCC that may trigger signaling for  
 CC repulsion. It also acts as a dependence receptor required for  
 CC apoptosis induction when not associated with netrin ligand.  
 CC -!- SUBUNIT: Interacts with the cytoplasmic part of DCC (By  
 CC similarity). Interacts with GNAI2 via its cytoplasmic part.  
 CC -!- SUBCELLULAR LOCATION: Type I membrane protein (By similarity).  
 CC -!- ALTERNATIVE PRODUCTS:  
 CC Event=Alternative splicing; Named isoforms=2;  
 CC Name=1;  
 CC IsoId=Q8IZJ1-1; Sequence=Displayed;  
 CC Name=2;  
 CC IsoId=Q8IZJ1-2; Sequence=VSP\_011698;  
 CC -!- TISSUE SPECIFICITY: Highly expressed in brain. Also expressed at  
 CC lower level in developing lung, cartilage, kidney and  
 CC hematopoietic and immune tissues.  
 CC -!- INDUCTION: By p53/TP53.  
 CC -!- PTM: Phosphorylated on cytoplasmic tyrosine residues (By  
 CC similarity).  
 CC -!- PTM: Proteolytically cleaved by caspases during apoptosis. The  
 CC cleavage does not take place when the receptor is associated with  
 CC netrin ligand. Its cleavage by caspases is required to induce  
 CC apoptosis.  
 CC -!- MISCELLANEOUS: Down-regulated in multiple cancers including  
 CC colorectal, breast, ovary, uterus, stomach, lung, or kidney  
 CC cancers.  
 CC -!- SIMILARITY: Belongs to the UNC-5 family.  
 CC -!- SIMILARITY: Contains 1 death domain.  
 CC -!- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.  
 CC -!- SIMILARITY: Contains 1 immunoglobulin-like domain.  
 CC -!- SIMILARITY: Contains 2 TSP type-1 domains.  
 CC -!- SIMILARITY: Contains 1 ZU5 domain.  
 CC -----  
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration  
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -  
 CC the European Bioinformatics Institute. There are no restrictions on its  
 CC use by non-profit institutions as long as its content is in no way  
 CC modified and this statement is not removed. Usage by and for commercial  
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>  
 CC or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
 CC -----  
 DR EMBL; AY126437; AAM95701.1; -.  
 DR EMBL; AB096256; BAC57998.1; -.  
 DR EMBL; AY358351; AAQ88717.1; -.  
 DR EMBL; AK022859; BAB14276.1; ALT\_INIT.  
 DR EMBL; AK094595; BAC04382.1; ALT\_INIT.  
 DR HSSP; P07996; 1LSL.  
 DR Genew; HGNC:12568; UNC5B.  
 DR MIM; 607870; -.  
 DR InterPro; IPR000488; Death.  
 DR InterPro; IPR011029; DEATH\_like.  
 DR InterPro; IPR007110; Ig-like.

DR InterPro; IPR003598; Ig\_c2.  
 DR InterPro; IPR000884; TSP1.  
 DR InterPro; IPR008085; TSP\_1.  
 DR InterPro; IPR000906; ZU5.  
 DR Pfam; PF00531; Death; 1.  
 DR Pfam; PF00047; ig; 1.  
 DR Pfam; PF00090; TSP\_1; 2.  
 DR Pfam; PF00791; ZU5; 1.  
 DR PRINTS; PR01705; TSP1REPEAT.  
 DR SMART; SM00005; DEATH; 1.  
 DR SMART; SM00408; IGc2; 1.  
 DR SMART; SM00209; TSP1; 2.  
 DR SMART; SM00218; ZU5; 1.  
 DR PROSITE; PS50017; DEATH\_DOMAIN; FALSE\_NEG.  
 DR PROSITE; PS50835; IG\_LIKE; 1.  
 DR PROSITE; PS50092; TSP1; 2.  
 KW Alternative splicing; Apoptosis; Developmental protein;  
 KW Immunoglobulin domain; Phosphorylation; Polymorphism; Receptor;  
 KW Repeat; Signal; Transmembrane.  
 FT SIGNAL 1 26 Potential.  
 FT CHAIN 27 945 Netrin receptor UNC5B.  
 FT DOMAIN 27 377 Extracellular (Potential).  
 FT TRANSMEM 378 398 Potential.  
 FT DOMAIN 399 945 Cytoplasmic (Potential).  
 FT DOMAIN 48 145 Ig-like.  
 FT DOMAIN 147 242 Ig-like C2-type.  
 FT DOMAIN 246 300 TSP type-1 1.  
 FT DOMAIN 302 354 TSP type-1 2.  
 FT DOMAIN 541 644 ZU5.  
 FT DOMAIN 865 943 Death.  
 FT SITE 412 413 Cleavage (by caspase-3).  
 FT SITE 707 725 Interaction with DCC (By similarity).  
 FT DISULFID 69 128 By similarity.  
 FT DISULFID 174 225 By similarity.  
 FT CARBOHYD 222 222 N-linked (GlcNAc. . .) (Potential).  
 FT CARBOHYD 347 347 N-linked (GlcNAc. . .) (Potential).  
 FT VARSPLIC 356 367 NKKTLSDPNL -> M (in isoform 2).  
 FT /FTId=VSP\_011698.  
 FT VARIANT 516 516 A -> T (in dbSNP:10509332).  
 FT /FTId=VAR\_019730.  
 FT MUTAGEN 412 412 D->N: Abolishes cleavage by caspase-3 and  
 FT subsequent induction of apoptosis.  
 FT CONFLICT 483 483 K -> E (in Ref. 3).  
 FT CONFLICT 851 851 L -> P (in Ref. 3; BAB14276).  
 SQ SEQUENCE 945 AA; 103637 MW; 56064E335F323447 CRC64;

Query Match 82.4%; Score 239; DB 1; Length 945;  
 Best Local Similarity 78.0%; Pred. No. 9.4e-20;  
 Matches 39; Conservative 4; Mismatches 7; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACATLC 50  
 |:| ||| || |||||:::|:||||| ||||| |:|  
 Db 250 SSWAEWSPCSNRCGRGWQKRTTCTNPAPLNGGAFCEGQAFQKTACTTIC 299

RESULT 8  
 UN5D\_HUMAN

ID UN5D\_HUMAN STANDARD; PRT; 953 AA.  
 AC Q6UXZ4; Q8WYP7;  
 DT 25-OCT-2004 (Rel. 45, Created)  
 DT 25-OCT-2004 (Rel. 45, Last sequence update)  
 DT 25-OCT-2004 (Rel. 45, Last annotation update)  
 DE Netrin receptor UNC5D precursor (Unc-5 homolog D) (Unc-5 homolog 4)  
 DE (UNQ6012/PRO34692).  
 GN Name=UNC5D; Synonyms=KIAA1777, UNC5H4;  
 OS Homo sapiens (Human).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
 OX NCBI\_TaxID=9606;  
 RN [1]  
 RP SEQUENCE FROM N.A. (ISOFORM 1).  
 RX MEDLINE=22887296; PubMed=12975309; DOI=10.1101/gr.1293003;  
 RA Clark H.F., Gurney A.L., Abaya E., Baker K., Baldwin D., Brush J.,  
 RA Chen J., Chow B., Chui C., Crowley C., Currell B., Deuel B., Dowd P.,  
 RA Eaton D., Foster J., Grimaldi C., Gu Q., Hass P.E., Heldens S.,  
 RA Huang A., Kim H.S., Klimowski L., Jin Y., Johnson S., Lee J.,  
 RA Lewis L., Liao D., Mark M., Robbie E., Sanchez C., Schoenfeld J.,  
 RA Seshagiri S., Simmons L., Singh J., Smith V., Stinson J., Vagts A.,  
 RA Vandlen R., Watanabe C., Wieand D., Woods K., Xie M.-H., Yansura D.,  
 RA Yi S., Yu G., Yuan J., Zhang M., Zhang Z., Goddard A., Wood W.I.,  
 RA Godowski P., Gray A.;  
 RT "The secreted protein discovery initiative (SPDI), a large-scale  
 RT effort to identify novel human secreted and transmembrane proteins: a  
 RT bioinformatics assessment.";  
 RL Genome Res. 13:2265-2270(2003).  
 RN [2]  
 RP SEQUENCE FROM N.A. (ISOFORM 2).  
 RC TISSUE=Brain;  
 RA Nakajima D., Nakayama M., Nagase T., Ohara O.;  
 RT "Identification of unc5H4 gene.";  
 RL Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.  
 CC -!- FUNCTION: Receptor for netrin. May be involved in axon guidance by  
 CC mediating axon repulsion of neuronal growth cones in the  
 CC developing nervous system upon ligand binding. Axon repulsion in  
 CC growth cones may be caused by its association with DCC that may  
 CC trigger signaling for repulsion. It also acts as a dependence  
 CC receptor required for apoptosis induction when not associated with  
 CC netrin ligand (By similarity).  
 CC -!- SUBUNIT: Interacts with the cytoplasmic part of DCC (By  
 CC similarity).  
 CC -!- SUBCELLULAR LOCATION: Type I membrane protein (By similarity).  
 CC -!- ALTERNATIVE PRODUCTS:  
 CC Event=Alternative splicing; Named isoforms=2;  
 CC Name=1;  
 CC IsoId=Q6UXZ4-1; Sequence=Displayed;  
 CC Name=2;  
 CC IsoId=Q6UXZ4-2; Sequence=VSP\_011703;  
 CC Note=No experimental confirmation available;  
 CC -!- PTM: Phosphorylated on cytoplasmic tyrosine residues (By  
 CC similarity).  
 CC -!- PTM: Proteolytically cleaved by caspases during apoptosis. The  
 CC cleavage does not take place when the receptor is associated with  
 CC netrin ligand. Its cleavage by caspases is required to induce  
 CC apoptosis (By similarity).

```

CC  -!- SIMILARITY: Belongs to the UNC-5 family.
CC  -!- SIMILARITY: Contains 1 death domain.
CC  -!- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.
CC  -!- SIMILARITY: Contains 1 immunoglobulin-like domain.
CC  -!- SIMILARITY: Contains 2 TSP type-1 domains.
CC  -!- SIMILARITY: Contains 1 ZU5 domain.
CC  -----
CC  This SWISS-PROT entry is copyright. It is produced through a collaboration
CC  between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC  the European Bioinformatics Institute. There are no restrictions on its
CC  use by non-profit institutions as long as its content is in no way
CC  modified and this statement is not removed. Usage by and for commercial
CC  entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC  or send an email to license@isb-sib.ch).
CC  -----
DR  EMBL; AB055056; BAB83663.1; -.
DR  EMBL; AY358147; AAQ88514.1; -.
DR  HSSP; P07996; 1LSL.
DR  Genew; HGNC:18634; UNC5D.
DR  InterPro; IPR000488; Death.
DR  InterPro; IPR011029; DEATH_like.
DR  InterPro; IPR007110; Ig-like.
DR  InterPro; IPR003598; Ig_c2.
DR  InterPro; IPR000884; TSP1.
DR  InterPro; IPR008085; TSP_1.
DR  InterPro; IPR000906; ZU5.
DR  Pfam; PF00531; Death; 1.
DR  Pfam; PF00047; ig; 1.
DR  Pfam; PF00090; TSP_1; 2.
DR  Pfam; PF00791; ZU5; 1.
DR  PRINTS; PR01705; TSP1REPEAT.
DR  SMART; SM00005; DEATH; 1.
DR  SMART; SM00408; IGc2; 1.
DR  SMART; SM00209; TSP1; 2.
DR  PROSITE; PS50017; DEATH_DOMAIN; FALSE_NEG.
DR  PROSITE; PS50835; IG_LIKE; 1.
DR  PROSITE; PS50092; TSP1; 2.
KW  Alternative splicing; Apoptosis; Developmental protein;
KW  Immunoglobulin domain; Phosphorylation; Receptor; Repeat; Signal;
KW  Transmembrane.
FT  SIGNAL          1      32      Potential.
FT  CHAIN           33     953     Netrin receptor UNC5D.
FT  DOMAIN          33     379     Extracellular (Potential).
FT  TRANSMEM       380     400     Potential.
FT  DOMAIN          401     953     Cytoplasmic (Potential).
FT  DOMAIN          54     151     Ig-like.
FT  DOMAIN          153     244     Ig-like C2-type.
FT  DOMAIN          252     306     TSP type-1 1.
FT  DOMAIN          308     360     TSP type-1 2.
FT  DOMAIN          540     642     ZU5.
FT  DOMAIN          859     936     Death.
FT  SITE            416     417     Cleavage (by caspase-3) (By similarity).
FT  SITE            703     721     Interaction with DCC (By similarity).
FT  DISULFID         75     134     By similarity.
FT  DISULFID        180     231     By similarity.
FT  CARBOHYD        117     117     N-linked (GlcNAc . . .) (Potential).
FT  CARBOHYD        228     228     N-linked (GlcNAc . . .) (Potential).

```

FT CARBOHYD 353 353 N-linked (GlcNAc. . .) (Potential).  
 FT CARBOHYD 376 376 N-linked (GlcNAc. . .) (Potential).  
 FT VARSPLIC 1 34 MGRAAATAGGGGGGARRWLPWLGLCFWAAGTAAAR -> MIL  
 FT VLVKALSDVCAGTSGFLLDFSSQTSP (in isoform  
 FT 2).  
 FT /FTId=VSP\_011703.  
 SQ SEQUENCE 953 AA; 105879 MW; 5F893B9DF746F731 CRC64;

Query Match 82.4%; Score 239; DB 1; Length 953;  
 Best Local Similarity 76.0%; Pred. No. 9.4e-20;  
 Matches 38; Conservative 5; Mismatches 7; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACATLC 50  
 |:||||| |: |||||||||:|||||||||||:|||| | :||  
 Db 256 SSWTEWSACNVRCGRGWQKRSRTCTNPAPLNGGAFCEGMSVQKITCTSLC 305

# RESULT 9

## UN5B\_MOUSE

ID UN5B\_MOUSE STANDARD; PRT; 945 AA.  
 AC Q8K1S3; Q6PFH0; Q80Y85; Q9D398;  
 DT 25-OCT-2004 (Rel. 45, Created)  
 DT 25-OCT-2004 (Rel. 45, Last sequence update)  
 DT 25-OCT-2004 (Rel. 45, Last annotation update)  
 DE Netrin receptor UNC5B precursor (Unc-5 homolog B) (Unc-5 homolog 2).  
 GN Name=Unc5b; Synonyms=Unc5h2;  
 OS Mus musculus (Mouse).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
 OX NCBI\_TaxID=10090;  
 RN [1]  
 RP SEQUENCE FROM N.A. (ISOFORM 1), AND TISSUE SPECIFICITY.  
 RX MEDLINE=22239710; PubMed=12351186; DOI=10.1016/S0925-4773(02)00248-4;  
 RA Engelkamp D.;  
 RT "Cloning of three mouse unc-5 genes and their expression patterns at  
 RT mid-gestation."  
 RL Mech. Dev. 118:191-197(2002).  
 RN [2]  
 RP SEQUENCE FROM N.A. (ISOFORM 1).  
 RC STRAIN=C57BL/6J; TISSUE=Medulla oblongata;  
 RX MEDLINE=22354683; PubMed=12466851; DOI=10.1038/nature01266;  
 RA Okazaki Y., Furuno M., Kasukawa T., Adachi J., Bono H., Kondo S.,  
 RA Nikaido I., Osato N., Saito R., Suzuki H., Yamanaka I., Kiyosawa H.,  
 RA Yagi K., Tomaru Y., Hasegawa Y., Nogami A., Schonbach C., Gojobori T.,  
 RA Baldarelli R., Hill D.P., Bult C., Hume D.A., Quackenbush J.,  
 RA Schriml L.M., Kanapin A., Matsuda H., Batalov S., Beisel K.W.,  
 RA Blake J.A., Bradt D., Brusica V., Chothia C., Corbani L.E., Cousins S.,  
 RA Dalla E., Dragani T.A., Fletcher C.F., Forrest A., Frazer K.S.,  
 RA Gaasterland T., Gariboldi M., Gissi C., Godzik A., Gough J.,  
 RA Grimmond S., Gustincich S., Hirokawa N., Jackson I.J., Jarvis E.D.,  
 RA Kanai A., Kawaji H., Kawasawa Y., Kedzierski R.M., King B.L.,  
 RA Konagaya A., Kurochkin I.V., Lee Y., Lenhard B., Lyons P.A.,  
 RA Maglott D.R., Maltais L., Marchionni L., McKenzie L., Miki H.,  
 RA Nagashima T., Numata K., Okido T., Pavan W.J., Pertea G., Pesole G.,  
 RA Petrovsky N., Pillai R., Pontius J.U., Qi D., Ramachandran S.,  
 RA Ravasi T., Reed J.C., Reed D.J., Reid J., Ring B.Z., Ringwald M.,  
 RA Sandelin A., Schneider C., Sempile C.A., Setou M., Shimada K.,

RA Sultana R., Takenaka Y., Taylor M.S., Teasdale R.D., Tomita M.,  
 RA Verardo R., Wagner L., Wahlestedt C., Wang Y., Watanabe Y., Wells C.,  
 RA Wilming L.G., Wynshaw-Boris A., Yanagisawa M., Yang I., Yang L.,  
 RA Yuan Z., Zavolan M., Zhu Y., Zimmer A., Carninci P., Hayatsu N.,  
 RA Hirozane-Kishikawa T., Konno H., Nakamura M., Sakazume N., Sato K.,  
 RA Shiraki T., Waki K., Kawai J., Aizawa K., Arakawa T., Fukuda S.,  
 RA Hara A., Hashizume W., Imotani K., Ishii Y., Itoh M., Kagawa I.,  
 RA Miyazaki A., Sakai K., Sasaki D., Shibata K., Shinagawa A.,  
 RA Yasunishi A., Yoshino M., Waterston R., Lander E.S., Rogers J.,  
 RA Birney E., Hayashizaki Y.;  
 RT "Analysis of the mouse transcriptome based on functional annotation of  
 RT 60,770 full-length cDNAs.";  
 RL Nature 420:563-573(2002).  
 RN [3]  
 RP SEQUENCE FROM N.A. (ISOFORM 2).  
 RC STRAIN=C57BL/6; TISSUE=Brain;  
 RX MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;  
 RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,  
 RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,  
 RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,  
 RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,  
 RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,  
 RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,  
 RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,  
 RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,  
 RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,  
 RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,  
 RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,  
 RA Fahey J., Helton E., Kettelman M., Madan A., Rodrigues S., Sanchez A.,  
 RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,  
 RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,  
 RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,  
 RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,  
 RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;  
 RT "Generation and initial analysis of more than 15,000 full-length human  
 RT and mouse cDNA sequences.";  
 RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).  
 RN [4]  
 RP TISSUE SPECIFICITY.  
 RX PubMed=12799072;  
 RA Dalvin S., Anselmo M.A., Prodhan P., Komatsuzaki K., Schnitzer J.J.,  
 RA Kinane T.B.;  
 RT "Expression of Netrin-1 and its two receptors DCC and UNC5H2 in the  
 RT developing mouse lung.";  
 RL Gene Expr. Patterns 3:279-283(2003).  
 CC -!- FUNCTION: Receptor for netrin required for axon guidance. Mediates  
 CC axon repulsion of neuronal growth cones in the developing nervous  
 CC system upon ligand binding. Axon repulsion in growth cones may be  
 CC caused by its association with DCC that may trigger signaling for  
 CC repulsion. It also acts as a dependence receptor required for  
 CC apoptosis induction when not associated with netrin ligand (By  
 CC similarity).  
 CC -!- SUBUNIT: Interacts with the cytoplasmic part of DCC. Interacts  
 CC with GNAI2 via its cytoplasmic part (By similarity).  
 CC -!- SUBCELLULAR LOCATION: Type I membrane protein (By similarity).  
 CC -!- ALTERNATIVE PRODUCTS:  
 CC Event=Alternative splicing; Named isoforms=2;

```

CC      Name=1;
CC      IsoId=Q8K1S3-1; Sequence=Displayed;
CC      Name=2;
CC      IsoId=Q8K1S3-2; Sequence=VSP_011699;
CC      -!- TISSUE SPECIFICITY: Highly expressed in brain. Expressed in lung
CC          during late development. Expressed during early blood vessel
CC          formation, in the semicircular canal and in a dorsal to ventral
CC          gradient in the retina.
CC      -!- PTM: Phosphorylated on cytoplasmic tyrosine residues (By
CC          similarity).
CC      -!- PTM: Proteolytically cleaved by caspases during apoptosis. The
CC          cleavage does not take place when the receptor is associated with
CC          netrin ligand. Its cleavage by caspases is required to induce
CC          apoptosis (By similarity).
CC      -!- SIMILARITY: Belongs to the UNC-5 family.
CC      -!- SIMILARITY: Contains 1 death domain.
CC      -!- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.
CC      -!- SIMILARITY: Contains 1 immunoglobulin-like domain.
CC      -!- SIMILARITY: Contains 2 TSP type-1 domains.
CC      -!- SIMILARITY: Contains 1 ZU5 domain.
CC      -----
CC      This SWISS-PROT entry is copyright. It is produced through a collaboration
CC      between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC      the European Bioinformatics Institute. There are no restrictions on its
CC      use by non-profit institutions as long as its content is in no way
CC      modified and this statement is not removed. Usage by and for commercial
CC      entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC      or send an email to license@isb-sib.ch).
CC      -----
DR      EMBL; AJ487853; CAD32251.1; -.
DR      EMBL; AK018177; BAB31108.1; -.
DR      EMBL; BC048162; AAH48162.1; ALT_INIT.
DR      EMBL; BC057560; AAH57560.1; -.
DR      HSSP; P07996; 1LSL.
DR      MGD; MGI:894703; Unc5b.
DR      InterPro; IPR000488; Death.
DR      InterPro; IPR011029; DEATH_like.
DR      InterPro; IPR007110; Ig-like.
DR      InterPro; IPR003598; Ig_c2.
DR      InterPro; IPR000884; TSP1.
DR      InterPro; IPR008085; TSP_1.
DR      InterPro; IPR000906; ZU5.
DR      Pfam; PF00531; Death; 1.
DR      Pfam; PF00047; ig; 1.
DR      Pfam; PF00090; TSP_1; 2.
DR      Pfam; PF00791; ZU5; 1.
DR      PRINTS; PR01705; TSP1REPEAT.
DR      SMART; SM00005; DEATH; 1.
DR      SMART; SM00408; IGc2; 1.
DR      SMART; SM00209; TSP1; 2.
DR      SMART; SM00218; ZU5; 1.
DR      PROSITE; PS50017; DEATH_DOMAIN; 1.
DR      PROSITE; PS50835; IG_LIKE; 1.
DR      PROSITE; PS50092; TSP1; 2.
KW      Alternative splicing; Apoptosis; Developmental protein;
KW      Immunoglobulin domain; Phosphorylation; Receptor; Repeat; Signal;
KW      Transmembrane.

```



FT	SIGNAL	1	26	Potential.
FT	CHAIN	27	945	Netrin receptor UNC5B.
FT	DOMAIN	27	377	Extracellular (Potential).
FT	TRANSMEM	378	398	Potential.
FT	DOMAIN	399	945	Cytoplasmic (Potential).
FT	DOMAIN	48	145	Ig-like.
FT	DOMAIN	153	242	Ig-like C2-type.
FT	DOMAIN	246	300	TSP type-1 1.
FT	DOMAIN	302	354	TSP type-1 2.
FT	DOMAIN	541	644	ZU5.
FT	DOMAIN	865	943	Death.
FT	SITE	412	413	Cleavage (by caspase-3) (By similarity).
FT	SITE	707	725	Interaction with DCC (By similarity).
FT	DISULFID	69	128	By similarity.
FT	DISULFID	174	225	By similarity.
FT	CARBOHYD	222	222	N-linked (GlcNAc. . .) (Potential).
FT	CARBOHYD	347	347	N-linked (GlcNAc. . .) (Potential).
FT	VARSP LIC	356	367	NQRTLNDPKSHP -> T (in isoform 2).
FT				/FTId=VSP_011699.
FT	CONFLICT	238	238	T -> A (in Ref. 2).
FT	CONFLICT	394	394	V -> E (in Ref. 2).
FT	CONFLICT	679	679	T -> S (in Ref. 2).
FT	CONFLICT	874	874	N -> D (in Ref. 2).
SQ	SEQUENCE	945 AA;	103738 MW;	80E896F0F0E06012 CRC64;

Query Match 82.1%; Score 238; DB 1; Length 945;  
 Best Local Similarity 78.0%; Pred. No. 1.2e-19;  
 Matches 39; Conservative 4; Mismatches 7; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSC TNPAPLNGGAFCEGQNVQKTACATLC 50  
 |:| ||| || |||||:::|:||||| |||| |:|  
 Db 250 SSWAEWSPCSNRCGRGWQKRTRTCTNPAPLNGGAFCEGQAFQKTACTTVC 299

# RESULT 10

## UN5B\_RAT

ID UN5B\_RAT STANDARD; PRT; 945 AA.  
 AC O08722;  
 DT 25-OCT-2004 (Rel. 45, Created)  
 DT 25-OCT-2004 (Rel. 45, Last sequence update)  
 DT 25-OCT-2004 (Rel. 45, Last annotation update)  
 DE Netrin receptor UNC5B precursor (Unc-5 homolog B) (Unc-5 homolog 2).  
 GN Name=Unc5b; Synonyms=Unc5h2;  
 OS Rattus norvegicus (Rat).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.  
 OX NCBI\_TaxID=10116;  
 RN [1]  
 RP SEQUENCE FROM N.A., FUNCTION, SUBCELLULAR LOCATION, AND TISSUE  
 RP SPECIFICITY.  
 RX MEDLINE=97271897; PubMed=9126742;  
 RA Leonardo E.D., Hinck L., Masu M., Keino-Masu K., Ackerman S.L.,  
 RA Tessier-Lavigne M.;  
 RT "Vertebrate homologues of C. elegans UNC-5 are candidate netrin  
 RT receptors.";  
 RL Nature 386:833-838(1997).  
 RN [2]

RP FUNCTION, AND INTERACTION WITH DCC.  
 RX PubMed=10399920;  
 RA Hong K., Hinck L., Nishiyama M., Poo M.-M., Tessier-Lavigne M.,  
 RA Stein E.;  
 RT "A ligand-gated association between cytoplasmic domains of UNC5 and  
 RT DCC family receptors converts netrin-induced growth cone attraction to  
 RT repulsion.";  
 RL Cell 97:927-941(1999).  
 RN [3]  
 RP FUNCTION, AND MUTAGENESIS OF ASP-412.  
 RX PubMed=11387206; DOI=10.1093/emboj/20.11.2715;  
 RA Llambi F., Causeret F., Bloch-Gallego E., Mehlen P.;  
 RT "Netrin-1 acts as a survival factor via its receptors UNC5H and DCC.";  
 RL EMBO J. 20:2715-2722(2001).  
 CC -!- FUNCTION: Receptor for netrin required for axon guidance. Mediates  
 CC axon repulsion of neuronal growth cones in the developing nervous  
 CC system upon ligand binding. Axon repulsion in growth cones may be  
 CC caused by its association with DCC that may trigger signaling for  
 CC repulsion. It also acts as a dependence receptor required for  
 CC apoptosis induction when not associated with netrin ligand.  
 CC -!- SUBUNIT: Interacts with GNAI2 via its cytoplasmic part (By  
 CC similarity). Interacts with the cytoplasmic part of DCC.  
 CC -!- SUBCELLULAR LOCATION: Type I membrane protein.  
 CC -!- TISSUE SPECIFICITY: Mainly expressed in regions of differentiating  
 CC neurons. Expressed in the developing sensory ganglia that flank  
 CC the spinal cord from E12, peaking at E14. Expressed in the roof  
 CC plate region of the spinal cord from E14.  
 CC -!- PTM: Phosphorylated on cytoplasmic tyrosine residues (By  
 CC similarity).  
 CC -!- PTM: Proteolytically cleaved by caspases during apoptosis. The  
 CC cleavage does not take place when the receptor is associated with  
 CC netrin ligand. Its cleavage by caspases is required to induce  
 CC apoptosis.  
 CC -!- SIMILARITY: Belongs to the UNC-5 family.  
 CC -!- SIMILARITY: Contains 1 death domain.  
 CC -!- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.  
 CC -!- SIMILARITY: Contains 1 immunoglobulin-like domain.  
 CC -!- SIMILARITY: Contains 2 TSP type-1 domains.  
 CC -!- SIMILARITY: Contains 1 ZU5 domain.  
 CC -----  
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration  
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -  
 CC the European Bioinformatics Institute. There are no restrictions on its  
 CC use by non-profit institutions as long as its content is in no way  
 CC modified and this statement is not removed. Usage by and for commercial  
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>  
 CC or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
 CC -----  
 DR EMBL; U87306; AAB57679.1; -.  
 DR HSSP; P07996; 1LSL.  
 DR RGD; 621756; Unc5h2.  
 DR InterPro; IPR000488; Death.  
 DR InterPro; IPR011029; DEATH\_like.  
 DR InterPro; IPR007110; Ig-like.  
 DR InterPro; IPR003598; Ig\_c2.  
 DR InterPro; IPR000884; TSP1.  
 DR InterPro; IPR008085; TSP\_1.

DR InterPro; IPR000906; ZU5.  
 DR Pfam; PF00531; Death; 1.  
 DR Pfam; PF00047; ig; 1.  
 DR Pfam; PF00090; TSP\_1; 2.  
 DR Pfam; PF00791; ZU5; 1.  
 DR PRINTS; PR01705; TSP1REPEAT.  
 DR SMART; SM00005; DEATH; 1.  
 DR SMART; SM00408; IGc2; 1.  
 DR SMART; SM00209; TSP1; 2.  
 DR SMART; SM00218; ZU5; 1.  
 DR PROSITE; PS50017; DEATH\_DOMAIN; 1.  
 DR PROSITE; PS50835; IG\_LIKE; 1.  
 DR PROSITE; PS50092; TSP1; 2.  
 KW Apoptosis; Developmental protein; Immunoglobulin domain;  
 KW Phosphorylation; Receptor; Repeat; Signal; Transmembrane.  
 FT SIGNAL 1 26 Potential.  
 FT CHAIN 27 945 Netrin receptor UNC5B.  
 FT DOMAIN 27 377 Extracellular (Potential).  
 FT TRANSMEM 378 398 Potential.  
 FT DOMAIN 399 945 Cytoplasmic (Potential).  
 FT DOMAIN 48 145 Ig-like.  
 FT DOMAIN 153 242 Ig-like C2-type.  
 FT DOMAIN 246 300 TSP type-1 1.  
 FT DOMAIN 302 354 TSP type-1 2.  
 FT DOMAIN 541 644 ZU5.  
 FT DOMAIN 865 943 Death.  
 FT SITE 412 413 Cleavage (by caspase-3).  
 FT SITE 707 725 Interaction with DCC.  
 FT DISULFID 69 128 By similarity.  
 FT DISULFID 174 225 By similarity.  
 FT CARBOHYD 222 222 N-linked (GlcNAc. . .) (Potential).  
 FT CARBOHYD 347 347 N-linked (GlcNAc. . .) (Potential).  
 FT MUTAGEN 412 412 D->N: Abolishes cleavage by caspase-3 and  
 FT subsequent induction of apoptosis.  
 SQ SEQUENCE 945 AA; 103520 MW; 6E9C2A262E560B9B CRC64;

Query Match 82.1%; Score 238; DB 1; Length 945;  
 Best Local Similarity 78.0%; Pred. No. 1.2e-19;  
 Matches 39; Conservative 4; Mismatches 7; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACATLC 50  
 |:| ||| || |||||:|:||||| |||| |:|  
 Db 250 SSWAEWSPCSNRCGRGWQKRTRTCTNPAPLNGGAFCEGQACQKTACTTVC 299

# RESULT 11

## UN5D\_MOUSE

ID UN5D\_MOUSE STANDARD; PRT; 956 AA.  
 AC Q8K1S2;  
 DT 25-OCT-2004 (Rel. 45, Created)  
 DT 25-OCT-2004 (Rel. 45, Last sequence update)  
 DT 25-OCT-2004 (Rel. 45, Last annotation update)  
 DE Netrin receptor UNC5D precursor (Unc-5 homolog D) (Unc-5 homolog 4).  
 GN Name=Unc5d; Synonyms=Unc5h4;  
 OS Mus musculus (Mouse).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.

OX NCBI\_TaxID=10090;  
 RN [1]  
 RP SEQUENCE FROM N.A., AND TISSUE SPECIFICITY.  
 RX MEDLINE=22239710; PubMed=12351186; DOI=10.1016/S0925-4773(02)00248-4;  
 RA Engelkamp D.;  
 RT "Cloning of three mouse Unc5 genes and their expression patterns at  
 RT mid-gestation.";  
 RL Mech. Dev. 118:191-197(2002).  
 CC -!- FUNCTION: Receptor for netrin involved in cell migration. May be  
 CC involved in axon guidance by mediating axon repulsion of neuronal  
 CC growth cones in the developing nervous system upon ligand binding.  
 CC Axon repulsion in growth cones may be caused by its association  
 CC with DCC that may trigger signaling for repulsion. It also acts as  
 CC a dependence receptor required for apoptosis induction when not  
 CC associated with netrin ligand (By similarity).  
 CC -!- SUBUNIT: Interacts with the cytoplasmic part of DCC (By  
 CC similarity).  
 CC -!- SUBCELLULAR LOCATION: Type I membrane protein (By similarity).  
 CC -!- TISSUE SPECIFICITY: Expressed in developing limb and mammary  
 CC gland.  
 CC -!- PTM: Phosphorylated on cytoplasmic tyrosine residues (By  
 CC similarity).  
 CC -!- PTM: Proteolytically cleaved by caspases during apoptosis. The  
 CC cleavage does not take place when the receptor is associated with  
 CC netrin ligand. Its cleavage by caspases is required to induce  
 CC apoptosis (By similarity).  
 CC -!- SIMILARITY: Belongs to the UNC-5 family.  
 CC -!- SIMILARITY: Contains 1 death domain.  
 CC -!- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.  
 CC -!- SIMILARITY: Contains 1 immunoglobulin-like domain.  
 CC -!- SIMILARITY: Contains 2 TSP type-1 domains.  
 CC -!- SIMILARITY: Contains 1 ZU5 domain.  
 CC -----  
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration  
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -  
 CC the European Bioinformatics Institute. There are no restrictions on its  
 CC use by non-profit institutions as long as its content is in no way  
 CC modified and this statement is not removed. Usage by and for commercial  
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>  
 CC or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
 CC -----  
 DR EMBL; AJ487854; CAD32252.1; -.  
 DR HSSP; P07996; 1LSL.  
 DR MGD; MGI:2389364; Unc5d.  
 DR InterPro; IPR000488; Death.  
 DR InterPro; IPR011029; DEATH\_like.  
 DR InterPro; IPR007110; Ig-like.  
 DR InterPro; IPR003598; Ig\_c2.  
 DR InterPro; IPR000884; TSP1.  
 DR InterPro; IPR008085; TSP\_1.  
 DR InterPro; IPR000906; ZU5.  
 DR Pfam; PF00531; Death; 1.  
 DR Pfam; PF00047; ig; 1.  
 DR Pfam; PF00090; TSP\_1; 2.  
 DR Pfam; PF00791; ZU5; 1.  
 DR PRINTS; PR01705; TSP1REPEAT.  
 DR SMART; SM00005; DEATH; 1.

DR SMART; SM00408; IGc2; 1.  
 DR SMART; SM00209; TSP1; 2.  
 DR PROSITE; PS50017; DEATH\_DOMAIN; FALSE\_NEG.  
 DR PROSITE; PS50835; IG\_LIKE; 1.  
 DR PROSITE; PS50092; TSP1; 2.  
 KW Apoptosis; Developmental protein; Immunoglobulin domain;  
 KW Phosphorylation; Receptor; Repeat; Signal; Transmembrane.  
 FT SIGNAL 1 30 Potential.  
 FT CHAIN 31 956 Netrin receptor UNC5D.  
 FT DOMAIN 31 382 Extracellular (Potential).  
 FT TRANSMEM 383 403 Potential.  
 FT DOMAIN 404 956 Cytoplasmic (Potential).  
 FT DOMAIN 52 149 Ig-like.  
 FT DOMAIN 151 242 Ig-like C2-type.  
 FT DOMAIN 250 304 TSP type-1 1.  
 FT DOMAIN 306 358 TSP type-1 2.  
 FT DOMAIN 543 645 ZU5.  
 FT DOMAIN 862 939 Death.  
 FT SITE 419 420 Cleavage (by caspase-3) (By similarity).  
 FT SITE 706 724 Interaction with DCC (By similarity).  
 FT DISULFID 73 132 By similarity.  
 FT DISULFID 178 229 By similarity.  
 FT CARBOHYD 115 115 N-linked (GlcNAc . . .) (Potential).  
 FT CARBOHYD 226 226 N-linked (GlcNAc . . .) (Potential).  
 FT CARBOHYD 351 351 N-linked (GlcNAc . . .) (Potential).  
 FT CARBOHYD 379 379 N-linked (GlcNAc . . .) (Potential).  
 SQ SEQUENCE 956 AA; 106351 MW; DFDF07839C10C68D CRC64;

Query Match 82.1%; Score 238; DB 1; Length 956;  
 Best Local Similarity 76.0%; Pred. No. 1.2e-19;  
 Matches 38; Conservative 4; Mismatches 8; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSCCTNPAPLNGGAFCEGQNVQKTACATLC 50  
 |:||||| |: |||||:|||||:|||||:|||||:|||||  
 Db 254 SSWTEWSACNVRCGRGWQKRSRTCTNPAPLNGGAFCEGMSVQKITCTALC 303

## RESULT 12

### UN5B\_XENLA

ID UN5B\_XENLA STANDARD; PRT; 943 AA.  
 AC Q8JGT4;  
 DT 25-OCT-2004 (Rel. 45, Created)  
 DT 25-OCT-2004 (Rel. 45, Last sequence update)  
 DT 25-OCT-2004 (Rel. 45, Last annotation update)  
 DE Netrin receptor UNC5B precursor (UNC-5 homolog) (Protein XUNC-5).  
 OS Xenopus laevis (African clawed frog).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidae; Pipidae;  
 OC Xenopodinae; Xenopus.  
 OX NCBI\_TaxID=8355;  
 RN [1]  
 RP SEQUENCE FROM N.A., AND TISSUE SPECIFICITY.  
 RX MEDLINE=22239703; PubMed=12351179; DOI=10.1016/S0925-4773(02)00215-0;  
 RA Anderson R.B., Holt C.E.;  
 RT "Expression of UNC-5 in the developing Xenopus visual system."  
 RL Mech. Dev. 118:157-160(2002).  
 CC -!- FUNCTION: Receptor for netrin required for axon guidance. Mediates

CC axon repulsion of neuronal growth cones in the developing nervous  
 CC system upon ligand binding (By similarity)..  
 CC -!- SUBCELLULAR LOCATION: Type I membrane protein (By similarity).  
 CC -!- TISSUE SPECIFICITY: In the developing visual system, it is  
 CC expressed within the developing optic vesicles and later become  
 CC restricted to the dorsal ciliary marginal zone, a site of  
 CC retinoblast proliferation and differentiation.  
 CC -!- PTM: Phosphorylated on cytoplasmic tyrosine residues (By  
 CC similarity).  
 CC -!- SIMILARITY: Belongs to the UNC-5 family.  
 CC -!- SIMILARITY: Contains 1 death domain.  
 CC -!- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.  
 CC -!- SIMILARITY: Contains 1 immunoglobulin-like domain.  
 CC -!- SIMILARITY: Contains 2 TSP type-1 domains.  
 CC -!- SIMILARITY: Contains 1 ZU5 domain.  
 CC -----  
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration  
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -  
 CC the European Bioinformatics Institute. There are no restrictions on its  
 CC use by non-profit institutions as long as its content is in no way  
 CC modified and this statement is not removed. Usage by and for commercial  
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>  
 CC or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
 CC -----  
 DR EMBL; AY099459; AAM34486.1; -.  
 DR HSSP; P07996; 1LSL.  
 DR InterPro; IPR000488; Death.  
 DR InterPro; IPR011029; DEATH\_like.  
 DR InterPro; IPR007110; Ig-like.  
 DR InterPro; IPR003598; Ig\_c2.  
 DR InterPro; IPR000884; TSP1.  
 DR InterPro; IPR008085; TSP\_1.  
 DR InterPro; IPR000906; ZU5.  
 DR Pfam; PF00531; Death; 1.  
 DR Pfam; PF00047; ig; 1.  
 DR Pfam; PF00090; TSP\_1; 2.  
 DR Pfam; PF00791; ZU5; 1.  
 DR PRINTS; PR01705; TSP1REPEAT.  
 DR SMART; SM00005; DEATH; 1.  
 DR SMART; SM00408; IGc2; 1.  
 DR SMART; SM00209; TSP1; 2.  
 DR SMART; SM00218; ZU5; 1.  
 DR PROSITE; PS50017; DEATH\_DOMAIN; FALSE\_NEG.  
 DR PROSITE; PS50835; IG\_LIKE; 1.  
 DR PROSITE; PS50092; TSP1; 2.  
 KW Developmental protein; Immunoglobulin domain; Phosphorylation;  
 KW Receptor; Repeat; Signal; Transmembrane.  
 FT SIGNAL 1 30 Potential.  
 FT CHAIN 31 943 Netrin receptor UNC5B.  
 FT DOMAIN 31 380 Extracellular (Potential).  
 FT TRANSMEM 381 401 Potential.  
 FT DOMAIN 402 943 Cytoplasmic (Potential).  
 FT DOMAIN 51 148 Ig-like.  
 FT DOMAIN 150 245 Ig-like C2-type.  
 FT DOMAIN 249 303 TSP type-1 1.  
 FT DOMAIN 305 357 TSP type-1 2.  
 FT DOMAIN 540 643 ZU5.

FT DOMAIN 863 941 Death.  
 FT DISULFID 72 131 By similarity.  
 FT DISULFID 177 228 By similarity.  
 FT CARBOHYD 225 225 N-linked (GlcNAc. . .) (Potential).  
 FT CARBOHYD 350 350 N-linked (GlcNAc. . .) (Potential).  
 SQ SEQUENCE 943 AA; 105083 MW; A024E24A7EDB6175 CRC64;

Query Match 75.5%; Score 219; DB 1; Length 943;  
 Best Local Similarity 70.0%; Pred. No. 2.2e-17;  
 Matches 35; Conservative 5; Mismatches 10; Indels 0; Gaps 0;

Qy 1 STWTEWSVCSASCGRGWQKRSRSTNPAPLNGGAFCEGQNVQKTACATLC 50  
 |:|||| |: || |||||:|:||||||| |||| || || |:|  
 Db 253 SSWTEWSPCNNRCGHGWQKRTRTCTNPAPLNGGTMCEGQQYQKFACNTMC 302

# RESULT 13

Q8BVQ2

ID Q8BVQ2 PRELIMINARY; PRT; 335 AA.  
 AC Q8BVQ2;  
 DT 01-MAR-2003 (TrEMBLrel. 23, Created)  
 DT 01-MAR-2003 (TrEMBLrel. 23, Last sequence update)  
 DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
 DE Mus musculus adult male testis cDNA, RIKEN full-length enriched  
 DE library, clone:4932412F09 product:sema domain, seven thrombospondin  
 DE repeats (type 1 and type 1-like), transmembrane domain (TM) and short  
 DE cytoplasmic domain, (semaphorin) 5A, full insert sequence.  
 OS Mus musculus (Mouse).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
 OX NCBI\_TaxID=10090;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=C57BL/6J; TISSUE=Testis;  
 RX MEDLINE=99279253; PubMed=10349636; DOI=10.1016/S0076-6879(99)03004-9;  
 RA Carninci P., Hayashizaki Y.;  
 RT "High-efficiency full-length cDNA cloning."  
 RL Meth. Enzymol. 303:19-44(1999).  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=C57BL/6J; TISSUE=Testis;  
 RX MEDLINE=21085660; PubMed=11217851; DOI=10.1038/35055500;  
 RA RIKEN FANTOM Consortium;  
 RT "Functional annotation of a full-length mouse cDNA collection."  
 RL Nature 409:685-690(2001).  
 RN [3]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=C57BL/6J; TISSUE=Testis;  
 RA The FANTOM Consortium,  
 RA the RIKEN Genome Exploration Research Group Phase I & II Team;  
 RT "Analysis of the mouse transcriptome based on functional annotation of  
 RT 60,770 full-length cDNAs."  
 RL Nature 420:563-573(2002).  
 RN [4]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=C57BL/6J; TISSUE=Testis;  
 RX MEDLINE=20499374; PubMed=11042159; DOI=10.1101/gr.145100;

RA Carninci P., Shibata Y., Hayatsu N., Sugahara Y., Shibata K., Itoh M.,  
RA Konno H., Okazaki Y., Muramatsu M., Hayashizaki Y.;  
RT "Normalization and subtraction of cap-trapper-selected cDNAs to  
RT prepare full-length cDNA libraries for rapid discovery of new genes."  
RL Genome Res. 10:1617-1630(2000).

RN [5]

RP SEQUENCE FROM N.A.

RC STRAIN=C57BL/6J; TISSUE=Testis;

RX MEDLINE=20530913; PubMed=11076861; DOI=10.1101/gr.152600;

RA Shibata K., Itoh M., Aizawa K., Nagaoka S., Sasaki N., Carninci P.,

RA Konno H., Akiyama J., Nishi K., Kitsunai T., Tashiro H., Itoh M.,

RA Sumi N., Ishii Y., Nakamura S., Hazama M., Nishine T., Harada A.,

RA Yamamoto R., Matsumoto H., Sakaguchi S., Ikegami T., Kashiwagi K.,

RA Fujiwake S., Inoue K., Togawa Y., Izawa M., Ohara E., Watahiki M.,

RA Yoneda Y., Ishikawa T., Ozawa K., Tanaka T., Matsuura S., Kawai J.,

RA Okazaki Y., Muramatsu M., Inoue Y., Kira A., Hayashizaki Y.;

RT "RIKEN integrated sequence analysis (RISA) system-384-format

RT sequencing pipeline with 384 multicapillary sequencer.";

RL Genome Res. 10:1757-1771(2000).

RN [6]

RP SEQUENCE FROM N.A.

RC STRAIN=C57BL/6J; TISSUE=Testis;

RA Adachi J., Aizawa K., Akimura T., Arakawa T., Bono H., Carninci P.,

RA Fukuda S., Furuno M., Hanagaki T., Hara A., Hashizume W.,

RA Hayashida K., Hayatsu N., Hiramoto K., Hiraoka T., Hirozane T.,

RA Hori F., Imotani K., Ishii Y., Itoh M., Kagawa I., Kasukawa T.,

RA Katoh H., Kawai J., Kojima Y., Kondo S., Konno H., Kouda M., Koya S.,

RA Kurihara C., Matsuyama T., Miyazaki A., Murata M., Nakamura M.,

RA Nishi K., Nomura K., Numazaki R., Ohno M., Ohsato N., Okazaki Y.,

RA Saito R., Saitoh H., Sakai C., Sakai K., Sakazume N., Sano H.,

RA Sasaki D., Shibata K., Shinagawa A., Shiraki T., Sogabe Y., Tagami M.,

RA Tagawa A., Takahashi F., Takaku-Akahira S., Takeda Y., Tanaka T.,

RA Tomaru A., Toya T., Yasunishi A., Muramatsu M., Hayashizaki Y.;

RL Submitted (APR-2002) to the EMBL/GenBank/DBJ databases.

DR EMBL; AK077021; BAC36572.1; -.

DR HSSP; P07996; 1LSL.

DR GO; GO:0016021; C:integral to membrane; IEA.

DR InterPro; IPR000884; TSP1.

DR InterPro; IPR008085; TSP\_1.

DR Pfam; PF00090; TSP\_1; 4.

DR PRINTS; PR01705; TSP1REPEAT.

DR SMART; SM00209; TSP1; 4.

DR PROSITE; PS50092; TSP1; 4.

KW Transmembrane.

SQ SEQUENCE 335 AA; 37185 MW; A6A451219EFC530D CRC64;

Query Match 51.0%; Score 148; DB 2; Length 335;

Best Local Similarity 54.5%; Pred. No. 2.1e-09;

Matches 24; Conservative 6; Mismatches 14; Indels 0; Gaps 0;

Qy 3 WTEWSVCASACGRGWQKRSRSCNTPAPLNGGAFCEGQNVQKTAC 46

|| || || :|| |:| | |||:|| | :|| | ||| :: |

Db 92 WTSWSPCSTTCGIGFQVRQRSCSNPTPRHGGRVCVGVQNRREERYC 135

RESULT 14

Q8BXU8



ID Q8BXU8 PRELIMINARY; PRT; 844 AA.  
 AC Q8BXU8;  
 DT 01-MAR-2003 (TrEMBLrel. 23, Created)  
 DT 01-MAR-2003 (TrEMBLrel. 23, Last sequence update)  
 DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
 DE Mus musculus 7 days neonate cerebellum cDNA, RIKEN full-length  
 DE enriched library, clone:A730090007 product:sema domain, seven  
 DE thrombospondin repeats (type 1 and type 1-like), transmembrane domain  
 DE (TM) and short cytoplasmic domain, (semaphorin) 5A, full insert  
 DE sequence.  
 OS Mus musculus (Mouse).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
 OX NCBI\_TaxID=10090;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=C57BL/6J; TISSUE=Cerebellum;  
 RX MEDLINE=99279253; PubMed=10349636; DOI=10.1016/S0076-6879(99)03004-9;  
 RA Carninci P., Hayashizaki Y.;  
 RT "High-efficiency full-length cDNA cloning.";  
 RL Meth. Enzymol. 303:19-44(1999).  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=C57BL/6J; TISSUE=Cerebellum;  
 RX MEDLINE=21085660; PubMed=11217851; DOI=10.1038/35055500;  
 RA RIKEN FANTOM Consortium;  
 RT "Functional annotation of a full-length mouse cDNA collection.";  
 RL Nature 409:685-690(2001).  
 RN [3]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=C57BL/6J; TISSUE=Cerebellum;  
 RA The FANTOM Consortium,  
 RA the RIKEN Genome Exploration Research Group Phase I & II Team;  
 RT "Analysis of the mouse transcriptome based on functional annotation of  
 RT 60,770 full-length cDNAs.";  
 RL Nature 420:563-573(2002).  
 RN [4]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=C57BL/6J; TISSUE=Cerebellum;  
 RX MEDLINE=20499374; PubMed=11042159; DOI=10.1101/gr.145100;  
 RA Carninci P., Shibata Y., Hayatsu N., Sugahara Y., Shibata K., Itoh M.,  
 RA Konno H., Okazaki Y., Muramatsu M., Hayashizaki Y.;  
 RT "Normalization and subtraction of cap-trapper-selected cDNAs to  
 RT prepare full-length cDNA libraries for rapid discovery of new genes.";  
 RL Genome Res. 10:1617-1630(2000).  
 RN [5]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=C57BL/6J; TISSUE=Cerebellum;  
 RX MEDLINE=20530913; PubMed=11076861; DOI=10.1101/gr.152600;  
 RA Shibata K., Itoh M., Aizawa K., Nagaoka S., Sasaki N., Carninci P.,  
 RA Konno H., Akiyama J., Nishi K., Kitsunai T., Tashiro H., Itoh M.,  
 RA Sumi N., Ishii Y., Nakamura S., Hazama M., Nishine T., Harada A.,  
 RA Yamamoto R., Matsumoto H., Sakaguchi S., Ikegami T., Kashiwagi K.,  
 RA Fujiwake S., Inoue K., Togawa Y., Izawa M., Ohara E., Watahiki M.,  
 RA Yoneda Y., Ishikawa T., Ozawa K., Tanaka T., Matsuura S., Kawai J.,  
 RA Okazaki Y., Muramatsu M., Inoue Y., Kira A., Hayashizaki Y.;  
 RT "RIKEN integrated sequence analysis (RISA) system-384-format

RT sequencing pipeline with 384 multicapillary sequencer.";  
 RL Genome Res. 10:1757-1771(2000).  
 RN [6]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=C57BL/6J; TISSUE=Cerebellum;  
 RA Adachi J., Aizawa K., Akimura T., Arakawa T., Bono H., Carninci P.,  
 RA Fukuda S., Furuno M., Hanagaki T., Hara A., Hashizume W.,  
 RA Hayashida K., Hayatsu N., Hiramoto K., Hiraoka T., Hirozane T.,  
 RA Hori F., Imotani K., Ishii Y., Itoh M., Kagawa I., Kasukawa T.,  
 RA Katoh H., Kawai J., Kojima Y., Kondo S., Konno H., Kouda M., Koya S.,  
 RA Kurihara C., Matsuyama T., Miyazaki A., Murata M., Nakamura M.,  
 RA Nishi K., Nomura K., Numazaki R., Ohno M., Ohsato N., Okazaki Y.,  
 RA Saito R., Saitoh H., Sakai C., Sakai K., Sakazume N., Sano H.,  
 RA Sasaki D., Shibata K., Shinagawa A., Shiraki T., Sogabe Y., Tagami M.,  
 RA Tagawa A., Takahashi F., Takaku-Akahira S., Takeda Y., Tanaka T.,  
 RA Tomaru A., Toya T., Yasunishi A., Muramatsu M., Hayashizaki Y.;  
 RL Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.  
 DR EMBL; AK043386; BAC31531.1; -.  
 DR HSSP; P07996; 1LSL.  
 DR GO; GO:0016021; C:integral to membrane; IEA.  
 DR GO; GO:0004872; F:receptor activity; IEA.  
 DR GO; GO:0007275; P:development; IEA.  
 DR InterPro; IPR003659; Plexin-like.  
 DR InterPro; IPR002165; Plexin\_repeat.  
 DR InterPro; IPR001627; Sema.  
 DR InterPro; IPR000884; TSP1.  
 DR InterPro; IPR008085; TSP\_1.  
 DR Pfam; PF01437; PSI; 1.  
 DR Pfam; PF01403; Sema; 1.  
 DR Pfam; PF00090; TSP\_1; 4.  
 DR PRINTS; PR01705; TSP1REPEAT.  
 DR SMART; SM00423; PSI; 1.  
 DR SMART; SM00630; Sema; 1.  
 DR SMART; SM00209; TSP1; 4.  
 DR PROSITE; PS50092; TSP1; 4.  
 KW Transmembrane.  
 SQ SEQUENCE 844 AA; 94673 MW; 19D4D8DAB36FBEA5 CRC64;

Query Match 51.0%; Score 148; DB 2; Length 844;  
 Best Local Similarity 54.5%; Pred. No. 5e-09;  
 Matches 24; Conservative 6; Mismatches 14; Indels 0; Gaps 0;

Qy 3 WTEWSVCSASCGRGWQKRSRSCSTNPAPLNGGAFCEGQNVQKTAC 46  
 || || || :|| |:| | |||:|| | :|| | ||| :: |  
 Db 601 WTSWSPCSTTCGIGFQVRQRSCSNPTPRHGGRVCGQNREERYC 644

# RESULT 15

## SM5A\_HUMAN

ID SM5A\_HUMAN STANDARD; PRT; 1074 AA.  
 AC Q13591; O60408;  
 DT 30-MAY-2000 (Rel. 39, Created)  
 DT 30-MAY-2000 (Rel. 39, Last sequence update)  
 DT 25-OCT-2004 (Rel. 45, Last annotation update)  
 DE Semaphorin 5A precursor (Semaphorin F) (Sema F).  
 GN Name=SEMA5A; Synonyms=SEMAF;  
 OS Homo sapiens (Human).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
 OX NCBI\_TaxID=9606;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=98125554; PubMed=9464278; DOI=10.1006/bbrc.1997.8027;  
 RA Simmons A.D., Puschel A.W., McPherson J.D., Overhauser J., Lovett M.;  
 RT "Molecular cloning and mapping of human semaphorin F from the Cri-du-  
 RT chat candidate interval."  
 RL Biochem. Biophys. Res. Commun. 242:685-691(1998).  
 RN [2]  
 RP SEQUENCE OF 1-494 FROM N.A.  
 RA Kalicki J., Harmon G.;  
 RL Submitted (APR-1998) to the EMBL/GenBank/DDBJ databases.  
 RN [3]  
 RP INTERACTION WITH PLXNB3.  
 RX PubMed=15218527; DOI=10.1038/sj.embor.7400189;  
 RA Artigiani S., Conrotto P., Fazzari P., Gilestro G.F., Barberis D.,  
 RA Giordano S., Comoglio P.M., Tamagnone L.;  
 RT "Plexin-B3 is a functional receptor for semaphorin 5A."  
 RL EMBO Rep. 5:710-714(2004).  
 CC -!- FUNCTION: May act as positive axonal guidance cues.  
 CC -!- SUBUNIT: Binds PLXNB3.  
 CC -!- SUBCELLULAR LOCATION: Type I membrane protein.  
 CC -!- SIMILARITY: Belongs to the semaphorin family.  
 CC -!- SIMILARITY: Contains 1 Sema domain.  
 CC -!- SIMILARITY: Contains 7 TSP type-1 domains.  
 CC -----  
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration  
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -  
 CC the European Bioinformatics Institute. There are no restrictions on its  
 CC use by non-profit institutions as long as its content is in no way  
 CC modified and this statement is not removed. Usage by and for commercial  
 CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>  
 CC or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
 CC -----  
 DR EMBL; U52840; AAC09473.1; -.  
 DR EMBL; AC004615; AAC14668.1; -.  
 DR PIR; JC5928; JC5928.  
 DR HSSP; P07996; 1LSL.  
 DR Genew; HGNC:10736; SEMA5A.  
 DR GO; GO:0007155; P:cell adhesion; TAS.  
 DR GO; GO:0007267; P:cell-cell signaling; TAS.  
 DR GO; GO:0007399; P:neurogenesis; TAS.  
 DR InterPro; IPR003659; Plexin-like.  
 DR InterPro; IPR002165; Plexin\_repeat.  
 DR InterPro; IPR001627; Sema.  
 DR InterPro; IPR000884; TSP1.  
 DR InterPro; IPR008085; TSP\_1.  
 DR Pfam; PF01437; PSI; 1.  
 DR Pfam; PF01403; Sema; 1.  
 DR Pfam; PF00090; TSP\_1; 6.  
 DR PRINTS; PR01705; TSP1REPEAT.  
 DR SMART; SM00423; PSI; 1.  
 DR SMART; SM00630; Sema; 1.  
 DR SMART; SM00209; TSP1; 6.  
 DR PROSITE; PS51004; SEMA; 1.

DR PROSITE; PS50092; TSP1; 6.  
KW Developmental protein; Glycoprotein; Multigene family; Neurogenesis;  
KW Repeat; Signal; Transmembrane.  
FT SIGNAL 1 22 Potential.  
FT CHAIN 23 1074 Semaphorin 5A.  
FT DOMAIN 23 968 Extracellular (Potential).  
FT TRANSMEM 969 989 Potential.  
FT DOMAIN 990 1074 Cytoplasmic (Potential).  
FT DOMAIN 35 484 Sema.  
FT DOMAIN 540 593 TSP type-1 1.  
FT DOMAIN 595 651 TSP type-1 2.  
FT DOMAIN 653 702 TSP type-1 3.  
FT DOMAIN 707 765 TSP type-1 4.  
FT DOMAIN 784 839 TSP type-1 5.  
FT DOMAIN 841 896 TSP type-1 6.  
FT DOMAIN 897 944 TSP type-1 7.  
FT DISULFID 104 114 By similarity.  
FT DISULFID 131 140 By similarity.  
FT DISULFID 278 320 By similarity.  
FT DISULFID 487 504 By similarity.  
FT DISULFID 496 513 By similarity.  
FT CARBOHYD 142 142 N-linked (GlcNAc. . .) (Potential).  
FT CARBOHYD 168 168 N-linked (GlcNAc. . .) (Potential).  
FT CARBOHYD 227 227 N-linked (GlcNAc. . .) (Potential).  
FT CARBOHYD 277 277 N-linked (GlcNAc. . .) (Potential).  
FT CARBOHYD 323 323 N-linked (GlcNAc. . .) (Potential).  
FT CARBOHYD 367 367 N-linked (GlcNAc. . .) (Potential).  
FT CARBOHYD 437 437 N-linked (GlcNAc. . .) (Potential).  
FT CARBOHYD 536 536 N-linked (GlcNAc. . .) (Potential).  
FT CARBOHYD 591 591 N-linked (GlcNAc. . .) (Potential).  
FT CARBOHYD 717 717 N-linked (GlcNAc. . .) (Potential).  
FT CARBOHYD 933 933 N-linked (GlcNAc. . .) (Potential).  
FT CONFLICT 56 56 A -> V (in Ref. 2).  
FT CONFLICT 149 149 A -> T (in Ref. 2).  
FT CONFLICT 382 382 V -> M (in Ref. 2).  
FT CONFLICT 494 494 S -> R (in Ref. 2).  
SQ SEQUENCE 1074 AA; 120570 MW; EE3DB763CBE29407 CRC64;

Query Match 51.0%; Score 148; DB 1; Length 1074;  
Best Local Similarity 54.5%; Pred. No. 6.2e-09;  
Matches 24; Conservative 6; Mismatches 14; Indels 0; Gaps 0;

Qy 3 WTEWSVCSASCGRGWQKRSRSCSTNPAPLNGGAFCEGQNVQKTAC 46  
|| || || :|| |:|| | |||:|| | :|| | ||| :: |  
Db 601 WTSWSPCSTTCGIGFQVRQQRSCSNPTPRHGGRVCVQGNREERYC 644

Search completed: March 1, 2005, 09:03:37  
Job time : 11.1466 secs